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Vienna bread and..

- 2247 ① vienna breads ✓
- ② baked goods ✓
- ③ baker's products ✓
- ④ vienna oven ✓
- ⑤ doughs ✓
- ⑥ ^{vienna} rolls ✓
- ⑦ flour blends ✓
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- ⑨ rusks ✓
- ⑩ cakes ✓
- ⑪ saxes ✓
- vienna crescents ✓
- loaf mixing machines ✓
- ⑫ fermentation methods

TLW

VIENNA BREAD

Wir unterzeichnete **Vorsteher** der **Bäcker-Genossenschaft**

Nicola Richter

bestanden bereits fünf gegenwärtigen Jahres das
im Vergleich der Jahre von 22, 23 Jahren. Erstliche Schuppen im Jahre 1833
am 5. in die Abtheilung
Wochen auf gleiche Weise
Jahre
best hat so wohl in am 5. Jahr
Herrn Graunachts Comptoirsgestellt und ordnungsmäßig für geschrieben
Es wird demnach dieser Nicola Richter
bezüglicher Schreibe mit dem Buchen selbst denselben abgeben ordentlichen Nachgeschiffen
bestanden und eben so dem Fortkommen alles Etwas befolgt zu sein

1881.

Dr. J. P. Davis

Don't say

U.S. DEPARTMENT OF THE INTERIOR

170

2008.08.28

VIENNA BREAD

and

Continental Breads de Luxe

by

Victor F. A. Richter

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Member S.A.M.B.



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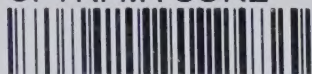
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Vienna bread and...

PREFACE

The late Mr. J. H. Macadam's invitation a few years ago to write this book I accepted with professional pleasure and pride. Unfortunately six years of war prevented me from carrying out the commission.

I have endeavoured to write as plainly and explicitly as possible so that every reader of this book, whether apprentice, student, journeyman, manager, or master, will be able to follow me easily from the beginning to the end and, furthermore, most important—to make the goods dealt with successfully ; to make them as they are made in the countries of their origin, to make them to be a delight to the maker, and to the eater.

With emphasis, I wish my British fellow craftsmen to understand that I write as a baker and pastrycook, who possesses the practical experience and acquired knowledge of more than fifty years of making Vienna, French and Continental fancy breads, rolls, fermented pastries and specialities de luxe in many countries thousands of bakeries of every size and condition.

I trust this book is filling a long-felt want and will be of interest and value to the British bakery craftsman.

V. F. A. RICHTER

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INTRODUCTION

The outstanding and important factors in the successful making of the wide range of Vienna bakery goods are primarily the complete mastery of panary fermentation of the methods to be adopted under varying conditions (temperature, season, etc.).

Care and judgment in the making and setting of sponges and doughs, skill and speed in the manipulation of the numerous shapes, planned and systematical modes of proofing in dry or humid environments, the conditioning of sponges, doughs and shaped goods, in a warm, cold, or draughty place do not exhaust the task of the baker of Viennese breads, rolls, and suchlike.

Furthermore, the final treatment and/or finishing off of the goods before entering the oven—and the oven work itself—may seem to the baker of the ordinary household bread laborious, complicated, perhaps even superfluous, but all these manipulations and practices are the essence of the craftsman's art—the mystery—“The hidden soul of baking !”

In addition, the right choice of suitable raw materials and ingredients, up-to-date equipment, painstaking (not pedantic) control of the temperature of sponges and doughs, air conditioning of production and storage rooms, scrupulous cleanliness everywhere and at all times, are vital determining factors of the standard of quality of the goods to be produced.

From the earliest days, the bakers of Vienna, the city of Emperors, were the standard-bearers of quality. In Vienna, people from many lands flocked together. In particular, members of the baking craft distinguished themselves, and they found in the “City of Gourmets,” connoisseurs of choice vintages, the lovers of music and songs, attractions in abundance which could only be to the advantage of our trade.

The finest varieties of wheats grow in our neighbouring country—Hungary. In the last quarter of the nineteenth century, the Hungarian and Viennese flour millers revolutionised the milling industry throughout the world by their epoch-making, new methods of grinding wheat. The finest, best, and from the point of view of bakery-technology, the most valuable wheat flours were at the call of the Viennese bakers and pastrycooks. Years earlier, Vienna had made known to the world the advent of its pressed yeast—manufacturing process.

The fine assortment of first-class Vienna ovens and oven-heating systems lessened considerably the undoubtedly tiresome labour on the old-fashioned faggot and wood-fired ovens, though still extensively in vogue in many bakeries and large factories, especially those producing rye breads. Our forefathers, with their unquestionably high skill, won world-wide fame for our Viennese bakery creations. From the culinary—and I may also truthfully add—from the not-less-aesthetic point of view, Viennese bakery productions have reigned supreme to the present time.

It is because the Viennese baker, pastrycook, and confiseur have always imparted an originality to their work and created a special distinctive type of bread, roll, pastry, rusk, sweet, ice-cream, etc. This type, the highest standard of bread pastry and sugar work, is still unsurpassed and will, I dare say, be copied in years hence.

Our friends and colleagues in Great Britain, Canada, Australia, and the U.S.A. must not forget that Vienna, the *alma mater* and “Mecca” of the world’s bakers and pastrycooks was and is predestined to hold the leading position in the production of delightful and beautiful food products.

Vienna breads, the whole family of them, with manifold and numerous descendants, will be the favourite all over the world where white men dwell. Vienna breads are the breads de luxe ; they wed the eye with the palate, with their crisp and golden crust, their tender silky and mellow crumb, exhaling a fascinating aroma and so delightful to the taste. “ Vienna bread tempts to eat not merely just to feed !”

With the exception of Great Britain and Ireland, the bakers of nearly all European countries and of the American continent cultivated intensively the making and marketing of Vienna breads as a matter of course.

Do not think I blame the British baker when making the above statement. The workshop of the world left no space for the culinary corner of the British public. Domestic virtues, nay, even husbandry, declined during the nineteenth century, as they did more than two thousand years before in ancient, powerful, Rome.

The modern Briton, since the discovery and application of steam power and its consequent developments in industry, shipping, and commerce, has had no time for agriculture, the domestic virtues, and the fine arts. He, like his classic predecessor, the Roman, who employed Greek slaves, engaged foreigners to fill the gap.

That is the reason why British people are known as the least food minders and most modest persons in matters of gastronomy,

although they enjoy the highest standard of living in other respects. Since British housewife's purse is the heaviest or longest in Europe, there should not be any reluctance on her part to pay the same price for her daily bread as her Continental sisters.

I am more than surprised that the British millers and bakers in their drive for increased bread consumption, have not had time or thought for boosting the aristocrats among breads—the Viennese family of rolls and breads. To be exact, there has been one exception among the millers and that firm's endeavours were rewarded with an increase in their sales by five figures of their top-grade flour in the first year.

Very slowly bakers throughout the country have begun to take interest in the making of Vienna bread and rolls, realising the vast possibilities in a field yet so little explored.

Taking a backward glance or a walk into the past forty years, I find that no change in the variety of doughs or shapes of Vienna breads has taken place. The lowest quality, made from a water dough with no enriching ingredients, has been nurtured by British bakers. Of course, here again, there have been outstanding exceptions—but how few ! This happened even in times when fat, milk, malt, sugar, and eggs were plentiful and cheap !

Fancy, making and selling something without beauty of form, taste, or flavour ! And these things were given the noble name of Vienna rolls ! Unforgivable is this debasing practice bordering on libel of the whole family of Vienna breads by producing an inflated, sawdust-like bag with a leathery or wooden crust and a crumb tasting as insipid as paper.

The object of these lines is not criticism only, but to give my colleagues and fellow-bakers constructive advice and useful help in the production of Vienna rolls.

First and foremost, suitable equipment, ovens with steam supply, are essential for successful, rational, and profitable production. Next, there is the choice of suitable raw materials and ingredients. Finally, the maker of these kinds of goods should be—or at least try hard to become a master of bakery. He should be able to carry out and carry through his task instinctively, capable to judge without hesitating, and decide what to do in any circumstances.

Fermentation, dough conditioning, manipulation, and baking technique are not a matter of mathematics yet !

Apprenticeship System in Austria

Fifty years ago bakers' apprentices had to work sixteen to eighteen hours a day, during six days of the week. Twelve hours

were worked on Sundays and there were no holidays during the three or four years' apprenticeship.

This amounted to 5,000 to 6,000 hours per annum. After the three years' service, the young journeyman baker or pastry-cook had 15,000 to 18,000 working hours behind him—hours of strenuous, hard and often heart-breaking work. But the young fellows learned quite a great deal under the severe tutelage of first-class craftsmen.

But a striking change and improvement was made in the lot of the apprenticed young workers during the post-war period. Bakers' apprentices were not permitted to do any work before 5 a.m. until they were sixteen years old ; night work was abolished in 1915. In accordance with the new social laws of the first Austrian Republic the bakers' apprentices, as well as the apprentices of all trades, were not allowed to work more than forty hours a week. Each week eight hours on one day had to be devoted to the attendance at a technical school.

During the third year of the apprenticeship the boys worked about five hours at the large co-operative bakery in Vienna under the supervision and tuition of specially selected masters of bakery and foremen bakery masters. It was a revelation to watch these young fellows working enthusiastically as dough-makers, ovenmen, stokers, table hands, etc. Each of these boys had to appear before an examination authority consisting of three incorporated master bakers and three journeymen bakers, all members of the District Bakers' Guild, and one official of the educational authorities. Needless to say, also, the apprentices belonged to the Guild too.

At present (1950) apprentices up to 18 years of age enjoy every year a four weeks' paid holiday in addition. Female apprentices are non-existent.

For the first two years after the examination, the young journeyman receives a lower wage than a table hand. Even the young journeyman, with his ten or fifteen thousand working hours, has still to learn a lot before he can take the place and responsibilities of a second dough-maker or ovenman, etc.

Apprentices in Austria in post-war years worked 1,700 hours per annum and spent 340 hours in the Fachschule (technical schools). This worked out in three years at 5,100 working hours and 1,000 hours in the school for bakers. Naturally the young baker of to-day looks at things quite differently from the older ones. Modern conditions have severed 90 per cent. of that personal link between apprentice, journeyman, and the employer.

It may be that the bakery workers of the coming years will be nothing more than machine-minders and fill the ranks of the

unlearned labourers. Hitherto a strong and prosperous class of small traders, artisans, shopkeepers, peasants, and farmers were the backbone of every civilised nation. I hope and pray that the competent authorities in unison with the representative bodies of employers and employees will see the light and feel it their social duty to give ample time and opportunity to the young workers to attend bakery schools, either in the evening or during one or two days of the week.

In the U.S.A., bakery circles are moving in the right direction in establishing an apprenticeship system. And this in a country where mechanisation seems to have reached its peak. In a country where scientific workshop management and time and motion studies' application has been a nation-wide, established custom for half a century.

CHAPTER I

INGREDIENTS

Wheat Flours

The best quality of flour is essential to make good Vienna bread and rolls. Conditions in the milling and baking industries have changed during the last thirty years or so. Many bakers still remember the excellent Austrian and Hungarian flours of yore but, with a few exceptions, no longer in existence.

The British baker is in the fortunate position to have at his disposal a wide range of really first-rate, top-grade flours of unsurpassed qualities, suitable to make the very best of breads of any description, Vienna bread *de luxe* included.

I do not hesitate to state that British-milled, top-quality flours are the envy of the Austrian miller and baker.

Twenty-five years ago, when I showed a sample of a well-known top brand of English-milled flour to the principal of a prominent milling firm in Austria, he exclaimed :—"How wonderfully dressed, what a lovely colour !" Needless to say, any Austrian or Hungarian miller of repute advertises on the labels the fact that his English top grade flour contains a certain proportion of "best Manitoba wheat."

There is not the slightest difficulty in procuring for our purposes suitable flour which will meet all the requirements for making Vienna bread, namely, a flour with a fair water-absorbing capacity and an elastic gluten ; milled by a process that ensures its strength and colour without losing its flavour. Such flour ought to be very regular and be able to stand up to the harsh treatment during manipulation of the doughs and shapes, especially when machines and moulders are employed.

The flour should possess that desirable creamy tint, the classical sign of quality, and impart it to the crumb of the baked bread. Millers and bakers should educate the bread-consuming public to eat quality and not—colour.

The white colour of British bread is an aesthetic error and has to be condemned from the culinary point of view. I should like to see British millers bringing on the market a more granular type of their top grades than hitherto, as such a flour would give better results. Doughs could be mixed slackier and would stand a higher oven temperature. The crispness of the crust would be

retained a longer time. A blend of granular and ordinary fine milled flour (50 per cent. of each) would give best results.

The choice of flours depends upon the bulk fermentation time the baker intends to give his doughs. I found that for a three to four hours dough (from the time of making the sponge or the dough in the case of an off-hand dough, until ready to be scaled off) nearly all British-milled, top-grade flours are quite suitable, but there are some flours which will not stand the fermentation plus the severe punching or knocking back and treatment in shaping the rolls.

Therefore, it is advisable to add, according to the baking properties of the flour, a proportion of Canadian spring wheat—or red hard winter wheat-flour. The experienced baker will be able, after a baking or two, to determine the exact proportions of his flour blend. Generally, 10 to 33 per cent. of suitable Canadian flour is blended with English top grades. The most suitable proportion of Canadian and British-milled flours, I shall give in the various sections of this work in due course.

The storage and conditioning of flours is as important as their choice. The flour store or loft must be cool and well ventilated—in fact, a current of fresh air, even in winter, is necessary. The bags containing flour must be stacked in such a way that they are accessible from all sides. They should not rest on the floor but at least 6 in. above it laid on wooden boards or beams. Thus, a proper ventilation is assured. Flour bags must not touch walls, shall not be exposed to the sun or be influenced by the heat of the ovens, flues, boilers, and suchlike. Damp places are not fit for storing flour. Flour lofts above the bakehouse or ovens should have windows or skylights and, if possible, a fan to produce the necessary draught.

All flours must be sifted before sponging or dough-making. Where space permits, the required quantity of flour should be blended in specially constructed containers a few days before use and agitated thoroughly every day. In this manner the Vienna and Austrian bakers condition and age their flours. Rolls made from such flours are bolder and of better flavour than when made from flour taken straight from the bag. There should be always a three weeks' stock kept in reserve to make sure of regular and satisfactory production. I am afraid this may seem to be a rather cumbersome procedure but it is the best I know of to get yield, volume, and flavour, besides doing justice to the flour. It craves for such treatment and will repay you generously for the trouble taken.

The above was written before the last war. Straight-run flours for Vienna bread and rolls and the wide range of fermented, continental specialities gave very satisfactory results when blended with

good Manitoba or Minnesota flours. I could get excellent French bread and rolls made with straight-run flour alone.

The introduction of national flour during the war compelled us to reduce considerably the established high standards not only of Vienna bread but of all bakery products. I am happy to say, that the public has not forgotten—and never will—their natural craving for white and fancy breads. As the British people during the war years “could take it,” so the baking fraternity could.

In post-war years the British baker acquainted himself with varying bakeability and water absorption capacity of the national flours, evolving new fermentation techniques and attaining mastery within a very short time. As a result, we find in all parts of the United Kingdom breads of the highest standard, Vienna and fancy breads and fermented goods of all classes included.

Periodically, the baker finds his flours wanting but the miller has no choice in the selection of wheats and the difficult position has to be faced and borne with fortitude, hoping for better times. Meanwhile we all apply our knowledge and experience, try new methods and devices to supply our customers with goods of which we, as craftsmen, may justly feel proud.

Rye Flour

Rye flour is supposed to be black ; that is what British bakers and the British public think. Both are wrong.

A firm in England is producing a beautifully white rye flour without any trace of branny particles. It can hold its own as regards colour with national wheat flour. The swelling properties of rye protein is the important factor to be considered, because, without the presence of an acidifying medium, the swelling of rye gluten takes place in an imperfect manner. The acidity of rye flour doughs can be controlled easily by the experienced and skilled continental baker. Scottish bakers possess the same knowledge with their virgin, parisian, and compound barmes employed in the making of wheat flour breads.

The lower the moisture content of rye flour, the longer the doughs have to ferment. The higher the age of a rye flour, the lower its bakeability. Bread from newly milled rye flour possesses the best flavour and palatability. Doughs must not be too warm and neither must the temperature of the oven be too high. Beautifully flavoured, white bread specialities can be produced with 33 to 50 per cent. white rye flour which will take the public's favour in no time. I cannot understand why British bakers have not exploited the possibilities of white rye in combination with whey as doughing liquid for the production of speciality breads as, for instance, whey bread.

There are naturally various kinds of rye flours, dark and branny, nearly like a coarse chop grade, and finer milled ones on the market. Their origin is continental but their qualities are very indifferent. There is no possibility of obtaining freshly milled rye flour and, consequently, the flavour and taste of the baked bread suffers.

Soya Flour in Modern Baking

For 5,000 years the soya bean has been a staple article of food with eastern peoples, but it is only now finding its way into the dietary of the occidental races. In an old Chinese manuscript of the year B.C. 2838 the soya bean was described by the Emperor Shen-Nung as "meat without bones," and it is a fact worthy of note that biological chemists consider the protein of the soya bean as identical with that of lean meat.

The soya bean was introduced into Europe as long ago as the eighteenth century, but an Austrian scientist, Professor F. Haberlandt, was the first to point out its importance in solving the food problems of the European nations. It was first shown to the public, in Vienna in 1873 and immediately attracted the notice of physiologists and dietetic experts, with the result that, during the next thirty years, a very large volume of experimental research work was carried out with the object of making the soya bean into a wholesome and palatable article of diet. From the nutritional point of view, the soya bean is everything that is desirable, containing, as it does, essential nutritive constituents—fat, protein, and carbohydrate in a readily assimilable form.

Modern Soya Flour Manufacture

After a six hours' "walk" up the Rax Alp, about 5,000 feet above sea level, in November, 1919, to enjoy a few days on skis in glorious sunshine and exhilarating mountain air, I sat down to dinner at the Archduke Otto House hotel, noted for its choice cuisine. A lady and her husband joined me at the table, and it was not very long before we discovered our mutual interest in food manufacture.

Both my table companions were doctors of chemistry, who told me of certain experiments and large-scale production of a friend of theirs, a medical man in Vienna. He used a quite new raw material from the Far East. He made quite a name during the first world war in syphilis research and switched over to food stuffs because of the protein starved peoples of Austria-Hungary.

When asking about the nature of this raw material, all I was told was that it contained 20 per cent. fat, 40 per cent. protein. Nor was the doctor's name disclosed, only his difficulties—the sausage

meat he made in a gunpowder factory quickly putrefied, it would not keep.

Being neither a doctor of medicine nor of chemistry but having had eight years of practical experimenting work and intensive studies to my credit, I asked Dr. Kuh, my skiing and table companion, to let me have a few pounds of this mysterious foodstuff of the East. I added, too, that his unnamed doctor friend should take a hint from a mere maker of man's daily bread and "keep his powder dry," using it as an ingredient for baked or heat-treated products, and forget the mash for the sausage meat : I was promised a working sample and a meeting.

At that time Mr. Robert Graham, managing director of Veda Flour Ltd., Edinburgh, was my principal whom I assisted in the supervision, distribution, and baking into Veda bread of a large consignment of Veda flour, a gift of Scottish miners, who collected £7,000 for the famished children and sick in Austria. We worked in collaboration with the Austrian Ministries of Social Welfare, of Food and of Health under the aegis of The International Hospital Action, the Inter-Allied Food Mission, and British Emergency Funds. Dr. Hilda Clark, Helen Fox, Ruth Fry, Dr. Chick, and a small but enthusiastic and efficient band of Quakers organised and accomplished the gigantic and philanthropic task of feeding, clothing, and helping the semi-starved population of the country for the first five years after the first World War.

On the day of his departure for London Mr. Graham asked me to go with him to see a certain Dr. Lasglo Berczeller in Vienna. After the usual preliminaries the doctor said : "Mr. Graham, I have done research work in my laboratory and made sausage meat with a specially milled soya bean flour." I fell into his speech exclaiming : "Oh, delighted to meet the mysterious friend of Dr. Kuh, my skiing acquaintance from the Rax Alp three weeks ago." Both men agreed to work together, Mr. Graham supplying the finances. I left them with working samples of six differently treated soya flours which I used in Veda bread.

After Mr. Graham's return from England I baked a whole batch of this bread, which we called "Manna," in the bakery of the Communal Hospital of Vienna. My principal assisted me with the moulding and scaling off. The baked bread was a success. Hitherto raw soya flour had not been used in baking in proportions of from 20 to 60 per cent. of the total quantity of flours. We solved this problem in the bakery and not in the laboratory. A number of patents were applied for and granted, thus the foundation of a new industry in Great Britain, Austria, Germany, the U.S.A., and Russia was laid.

The Times had a leading article with a comprehensive report of their Vienna correspondent about our research and relief work.

The late "Bard" of *The British Baker* wrote in his incomparable poetizing manner, seasoned with liberal doses of Attic salt about it. In the same year (1921) Mr. Winston S. Churchill in a speech at a banquet, coined one of his characteristic truly Churchillian sentences, namely : "It is of the highest political importance that the West should learn the lesson of a cheaper standard of living which is taught them by the people of the East in the adoption of the soya as an article of food !"

Dr. Berczeller perfected a process in 1924 of milling the soya bean flour which, as regards appearance, taste, and purity, is comparable with the finest products of modern milling. High-grade soya flour is now available for all bakery purposes ; it is of a light creamy-yellow colour. It has already come into general use on the continent, particularly in Austria, where it is a regular ingredient of bread, rolls, cakes, all kinds of small goods, biscuits, puddings and ice-cream, etc.

The use of soya flour in the baking and confectionery trades is simplicity itself, and it does not in any way interfere with ordinary methods of production. The only important point to be noted is the necessity for the addition of extra liquor, since soya flour absorbs twice as much water as ordinary flour. It can be used in a ferment, in a sponge, and in straight dough ; mixed up as is milk powder, it can be emulsified, creamed with fat and sugar, and used in flour-batter for cakes ; sifted with the flour for sponges and biscuits, wetted down with water to a paste for butter creams, custards, and suchlike.

Added in the proportion of 2 lb. to a sack of ordinary flour and worked as a straight or sponge dough, soya flour has a most remarkable effect. Since it is a yeast food of the first quality, fermentation proceeds smoothly, and ferments, sponges, and doughs ripen in shorter time. The doughs themselves are elastic and full of life.

It is important to remember that soya flour has a beneficial effect on weak flours, and recent experiments with English country flours exceeded my most sanguine expectations, so much so that I can safely assert that English wheat flour, together with soya flour, will give a loaf with the fine flavour of the old-fashioned breads of our youth.

But, although the effect of soya used at the rate of 2 lb. to the sack is remarkable enough from the point of view of flavour, more striking still is its influence on the bloom of the loaf, the colour and texture of the crumb, keeping qualities, and, above all, on yield.

Complaints from customers about bread going dry never seem to arise when soya flour is used. The keeping qualities are excellent.

As regards the amount of liquor that can be used when soya

flour is added to the mix, this has to be seen to be believed. The additional yield more than counterbalances the slightly added cost of soya flour as compared with ordinary flour.

I have said that soya flour, because it is a yeast food, livens fermentation, and this is true. In this connection I would explain that when a dough is somewhat on the cold side and the yeast is not up to the mark, soya flour, by reason of its particular properties, prevents any falling away from the usual standard.

In my view, all brown breads gain in eating, cutting, and keeping properties by the addition of 10 per cent. of soya flour, and there is also a largely increased yield. In fact, for wholemeal and brown breads, its addition cannot be too strongly recommended.

A special soya loaf containing 22 per cent. of soya and 78 per cent. of ordinary wheat-flour, with the addition of 25 to 28 gall. water per sack has the same nutritive value as the same weight of lean beef.

This loaf catches the eye immediately, has an excellent flavour, and keeps fresh for a week or longer, while it is not a dark coloured loaf.

As regards confectionery and the general production of smalls and cakes, soya flour is not merely intended to replace other ingredients, but to make all goods more palatable, easier to digest, and to keep them fresh longer than usual.

As a soya enthusiast since 1919 I would ask every wide-awake and progressive baker and confectioner to remember that by its use, eggs, milk, and fat can be reduced, and it also contains high-grade protein, vitamins, sugars, mineral salts, and lecithin (the valuable component of egg), all in one ideal combination made by nature.

Yeast

Healthy, pure, and vigorously working pressed yeast of known and reputed origin will ferment the sponges and doughs for Vienna and French bread efficiently. The smell, taste, and colour must be pleasant to the senses, its consistency of a pliable character ; such yeast will have a clean break and disperse readily in the sponging or doughing liquor.

A smeary yeast with peculiar smell is unfit for use. Yeast, throughout its lifetime—whether in the store, the fermenting-tub, the trough or in the finished shapes for the final prove—must be in a suitable and congenial environment and in a healthy condition. The refrigerator or the ice chest, or a cool cellar, is the place to store yeast. Small quantities of yeast, pressed firmly into a solid lump, are best put in a stone jar or similar receptacle. A little cold water to moisten the surface of the yeast and covering the jar

with a damp yeast bag will keep the yeast in good health and strength. Not an ounce of yeast need be wasted through deterioration throughout the whole year.

Bakers sin too often in this respect, they do not pay sufficient attention to the points of conditioning their raw materials and various ingredients and then they wonder why their batches are irregular in more than one respect. Whole bags of yeast, nearly boiling hot, are left uncared for, and such yeast is used by the practical and experienced baker ! I found this situation in a number of bakeries I have visited in this country. Such an attitude on the part of the bakers shows not only ignorance and indifference, but also lack of pride in craftsmanship. I mentioned that the condition of the materials and ingredients is of the utmost importance and the deciding factor in obtaining good results. Making a mistake in the number of gallons of water used (just to mention one error which can always be rectified), will not lead to a catastrophe, but neglected or maltreated raw materials and ingredients will do so every time ! I have seen such catastrophes in an appalling number of places.

For a 3 to 4-hour dough (from beginning to scaling off) I prefer a fast, vigorously working yeast to any other type. To speed up the last stages of fermentation, *i.e.*, the final shaping and proof (on boards or in tins) and to get good oven-spring, I use 50 per cent. of the yeast in the sponge and the remainder goes with the doughing liquid into the dough. The result is astonishing ! This is because we can rationalize the activities of the yeast—harnessing its pace in the sponge and rejuvenating and revitalizing it in the dough stage with new and young yeast—thus obtaining the maximum of gas production and expansion at the desired and critical time.

For a longer fermentation period (more than 4 hr. in the dough) most decidedly I advocate the use of a slower working type of yeast. By that I mean a normal and healthy yeast, not a languid yeast which will exhaust itself before the loaves and rolls reach the oven. Such a yeast (not desirable) seems to be in a continual state of coma judging by the sluggish behaviour of the dough. To cut such a dough will show on the surface the size of a shilling interesting colonies of decaying and dead yeast cells. Such yeast will raise the temper of the operators but will never do in Vienna, French, or in any other bread dough.

By no means blend these two types of yeast at random. By the way—what qualification has the average baker or the yeast merchant to blend yeasts ? This may be more efficiently done when yeasts are in their liquid form by the competent manufacturer.

In Vienna bread-baking it is safer to split your yeast, *viz.* 50 per cent. in the sponge and the balance in the dough, than to blend it.

Malt

Malt products, either liquid or dry malt extracts or malt flours of highest quality and reliable diastatic power, are essential for the making of Vienna bread and rolls. I cannot emphasise strongly enough the advantageous use of malt extracts in the making of all classes of yeast-raised goods, and the desirability of using more malt extract than has been customary in this country for the past forty years.

Vienna bread made with malt products distinguishes itself by its volume, moistness, delicious-eating crumb, and crisp crust with the proverbial "golden bloom."

How Malt Extracts should be used

I recommend to use malt in the following simple way. Break the yeast into small pieces, pour the malt extract over it (with concentrated dry extracts or malt flour put them together with the yeast) and an adequate quantity of lukewarm water (75 deg. F.), stir or whisk well, and let stand for 10 min. but not longer.

This procedure has a most beneficial influence on the action of the yeast in the sponge and dough.

Liquid Malt Extracts to use during the Winter months

Add to the required daily quantity of malt extract 10 per cent. of its weight of cold water. Work the water into the malt extract gradually in 5 portions and measure this solution when required. The doughmaker will soon find out how convenient and accurate is this way of handling malt extracts.

There is no waste of material or time and the exact quantity is obtained.

Thus variations in the baked goods, especially their crust, will be eliminated. Furthermore, malt extracts in Vienna bread doughs and similar fermented goods assist remarkably during the final proofing stage in retaining a moist skin.

Remember the old Vienna bakers' slogan :—"A dough without malt is like a soup without salt."

Water

Water must be free from all impurities, such as dirt, rust, clay, and all foreign matter. It should be fairly hard.

Salt

The clean, fine salt must be stored in a dry place. It can be added to the dough during mixing in its dry state.

For dressing and topping salt stick, salt rolls, and rolls of that type, hard salt crystals, such as granulated sugar, is the suitable kind. Invariably this crystal salt is mixed with proportions of carraway seeds to enhance the flavour of the roll or loaf.

Milk

Fresh full cream milk is one of the best flavouring agents and an ideal emulsion in all classes of Vienna bread, rolls, and other fermented fancy breads, pastries, and cakes. Personally I prefer it to every other kind of milk. Bakers in Athens contend that, for flavour, the fresh milk of goats is the finest to use in the making of rolls and pastry.

The use of fresh milk will give doughs a pronounced plasticity, produce a bigger yield (lower fermentation loss), a better volume, and give a softer and whiter crumb than doughs without it.

Milk and malt extract match well and contribute a great deal of flavour, aroma, and taste to the baked product.

A considerable proportion of milk in Vienna doughs necessitates slacker dough consistency and watching fermentation; once the doughs are ripe they will quickly become old. Too hot proofers filled with steam, cause tearing of the rolls' surface and consequently ugly shapes when baked.

For quality dinner, luncheon, coffee and *de luxe* rolls 25 to 66 per cent. of the total liquid should be fresh full cream milk.

Fresh skimmed milk: For plain Vienna bread and dinner rolls 10 to 66 per cent. of the total liquid should be fresh skimmed milk.

Many quality bakers use all milk for sponge and dough.

Sweetened condensed milk, at the rate of 3 oz. to each 1 qt. water makes an excellent substitute for fresh milk, full cream or skim.

The baked products possess fine flavour, soft crumb, and delicious-eating crust of exquisite colour.

Condensed unsweetened (evaporated) milk is also a good enriching product for the making of Vienna bread doughs.

A 1-lb. tin suffices for 2 qt. of doughing liquid.

Dried Full Cream or skim milk (spray processed) from reliable sources well dissolved in cold water a few hours before use gives the best results. Dried milk must contain all the constituents of fresh milk (less the water).

Imported (Continental) milk powders, of no use to the maker or the consumer find too often their way into British bakehouses, because all the casein is extracted for the making of knife handles, billiard balls, and similar inedible products.

Goods made with fresh milk are always superior in flavour.

Sour Milk: Vienna and Austrian bakers use sour milk most

advantageously in their doughs, with the exception of doughs destined to make kaiser or emperor rolls. Sour milk must not be used for making a sponge or ferment.

After dough-mixing, two knocks back after half rise and working off at once will give good results if watched carefully.

Whey : This greenish-looking liquid obtained after separating out the curd is very rich in mineral salts and vitamin G. Whey is not only nutritious, it is a flavouring agent beyond doubt. Readers may be hesitant to use this valuable and nutritious liquid because it is considered a bye or waste product and is of a decomposing nature. I maintain that the decomposing activity of certain enzymes in fermenting doughs has a parallel in the decomposition of venison or game, producing those flavouring substances so delightful and appreciated by the connoisseur.

For many years lactic media have their useful and predetermined application in other industries for the same purpose—to develop flavour. In butter production to a great extent the flavour is determined by the degree of lactic acid organisms development in the basal cream or milk. Later, such processes were adopted in the manufacture of margarine.

The yellowish-green fluorescent pigment of whey was studied as early as 1879.

May it be understood that during the fermentation of acidified and cool doughs, certain chemical and biological processes occur which impart to the baked bread aroma, flavour, and moistness of the crumb, which would be absent in similar breads from doughs of higher temperatures (80 deg. F.) and without whey. Whey has also a similar effect on crumb and crust-formation like fat.

Whey paste. During the first years of the last world war a whey product in condensed, paste-like form was available to bakers. It was a first-rate enriching agent to all kinds of bread doughs, including tea breads, cookies, etc.

Lest I forget, whey is a most effective, natural preventative of mould in bread.

Dried Whey in powder form, of British or Australian origin, is a very good enricher and can be used in the same manner as dried milk products.

Milk Curd : The curd of the sour milk may be used for luscious fillings for fermented continental pastries, gateaux, flans, Yorkshire cheese cakes, and last but not least, a delicious puff paste, wherein part of the flour is substituted with milk curd.

Soya Milk : A finely milled raw soya flour, *i.e.*, untreated, not a processed one, must be used for this purpose. With every lb. of soya sieve 1 oz. carbonate of soda (Sodium sicc. or sod.

carb.) and allow to each 1 lb. flour 7 lb. boiling water. The following quantities are easily manipulated :—

20 qt. water

7 lb. raw soya flour

1 oz. carbonate of soda (sodium siccum)

Place the soya flour into the bowl of the machine and start on slow speed. Pour the boiling water gradually on to the flour. Agitate the liquid for 10 min. without altering the speed. After this time the liquid will show a temperature of 130 deg. F. when tested. Add 3 oz. non-diastatic liquid malt extract for each pound of soya flour. Stir until the extract is dissolved.

Strain and cool the milk as quickly as possible. Store in a cool place.

This soya milk turns sour just as other milk. It has the body of full cream milk, resembling double cream and will do the work of cow's milk. Fermentation in fermented goods, fancy breads and suchlike will not be retarded. Cakes in which it is used keep fresh longer and have a rich appearance. Ice-cream made with soya milk is delicious.

Soya milk from untreated soya flour may be diluted and used like ordinary milk.

Sugar

Raw cane sugar or soft pieces to serve as a yeast food, flavour and sweetening agent are given preference by the Vienna craftsman to denatured-refined sugars for Vienna rolls and breads of every description, briochees, rusks, milk and fancy breads, and similar bakery products. The use of these sugar types was one of the so-called secrets of the continental baker of yore.

Invert sugar is definitely an advantage in continental breads, rolls, and pastries of the fermented kind. It aids healthy fermentation and is directly fermentable. Goods made with, or containing invert sugar have better volume, texture, and crumb colour.

Only then when cane sugar or soft pieces are not at hand do I use castor sugar instead.

Nib and Icing sugar is used for finishing and decorating purposes for certain productions before and after baking.

For instance before baking : Egg wash briochees and dredge them with coarse nib sugar then bake with open dampers.

Dredge Viennese apple, red-currant or cream cheese curd strudel with icing sugar, about 5 min. before being drawn.

Cover Vienna, Dresden or Leipzig stollen with vanilla-icing sugar when baked.

Honey is used in sweet walnut and poppy seed fillings. In lebkuchen, Basler lecklie and pain d'espace, honey is the most

important ingredient. These goods are a speciality of one of the many branches of the continental confectioner or sugar baker.

Eggs

Fresh shell eggs, preserved, or cold-stored shell eggs are necessary for Viennese fancy breads, pastries, Jewish bread, and suchlike. Use shell eggs of good quality and in good condition all the time, either as an ingredient or for the egg wash.

Dried Eggs: Dried eggs are doing good service in the absence of shell eggs. I give preference to the sugar dried variety and cannot praise this commodity high enough. For brioches, fancy milk breads of the highest quality, fermented Vienna plunder dough pastries and cakes, babas, savarins, guglhupfs, and high-class gateaux, and in goods where flavour is the dominating factor—I prefer sugar dried eggs to Chinese frozen eggs.

In 1926, when managing the world-famous bakery of Uhl-Breunig in Vienna, bakers to the former Imperial Court, the Austrian agents of Chinese frozen eggs importers left a sample tin for a baking trial. I had them used in the confectionery department for the making of torten and genoese sheets for fancies. I distributed the goods in our five shops, which were located in the two most fashionable districts of Vienna. The following day complaints arrived from each shop. The ladies who ate the goods in the shops and at home declared that the confections tasted stale and were different from what they had been accustomed. I never used another tin of frozen eggs—just shell were only good enough for our customers, who belonged to the most fastidious stratum of Viennese society.

Here in Great Britain no complaints came to my notice wherever I used frozen eggs in most liberal proportions up to 50 per cent. of the total liquid in the doughs for plunder pastries, brioches and fancy milk, tea breads, etc.

Fats

In Vienna and Austria bakers use fats very discriminately. Their main object is to obtain outstanding culinary and aesthetic attributes for their manifold products: they must have aroma, flavour, palatability, silkiness of the crumb with its beautiful colour, and crispness and golden bloom of the crust.

Best results are obtained unquestionably from best butter, clarified and separated from its moisture and sediment (consisting of casein, sugars, salt, etc.) and solidified. This butter fat has a beautiful golden colour and possesses a very pleasant aroma. Its consistency is soft and granular. It can be kept for months in sound condition in suitable receptacles and stored in the cellar or refrigerator. The best storing temperature is 40 deg. F.

So-called "renovated" butter is of no value from a flavour-imparting point of view.

Next to butter fat, oleo margarine from premier-jus in its crystalline state has to be given first place. Oleo margarine imparts a very pleasant taste to the goods.

Hog lard with fine granular texture I give third place. Best English bladder lard is the best lard. Choice and best neutral lard is an excellent fat for flavour in the plainer kinds of rolls. It goes very well with a blend of one-third of butter fat, one-third of oleo margarine, and one-third of best lard for quality fancy breads and rolls. Lard by itself and a blend as above induces splendid keeping qualities.

Also pure hog lard, or a blend of one-third hog lard, one-third groundnut oil, and one-third of oleo margarine is of the greatest value in Vienna breads and rolls. Even at the low rate of 2 lb. lard to the sack of flour (280 lb.) a definite improvement will be noticed. There is an effective physical influence on the dough's structure and ultimate effect on the baked loaf or roll. Better texture, better sheen, better moistness, and whiter colour of the crumb are the valuable features and attributes. I am aware that bakers of great reputation hold or held the view that such a small quantity of fat to the sack of flour is useless. But five years of war and five years of food shortage in the whole world taught us differently. Hog lard will impart flavour to bread! Neutral vegetable fats or oils do not! This is another axiom in Vienna bread-making.

Arachide or groundnut oil is the most suitable vegetable oil in conjunction with lard, or better entirely by itself for Vienna bread-making. Virgin arachide oil No. 1 is the best liked. Austrian bakers had it imported from France in pre-war days. Groundnut oil or fat keeps well up to three or four months in good storage. Its use in so-called Jewish bread, such as chollas, baches, etc., is universal.

It is a short-sighted policy and against good craftsmanship to use fats or oils indiscriminately. To get flavour and deliciously eating bread we have to use the best and purest. He who merely uses a so called shortener of a neutral character may do so, but he must not expect flavour nor a profit by selling a baker's dozen of Vienna rolls at 6d.

For greasing baking sheets, shapes, tins, troughs, bowls, containers, bun dividers, moulders, etc., pure, sweet, groundnut oil is the easiest, most pleasant, and suitable material for the quality Vienna baker. For the frying of Viennese carnival pancakes (krapfen), the celestial counterpart of the doughnuts in English-speaking countries, best quality hog lard is used.

For certain doughs and pastes the writer prefers a good pliable

cake margarine or nut butter to pastry margarine. Users of pastry margarine will be astonished at the improvement by working 1 oz. Rum into 2 lb. pastry margarine.

Fat Extenders

During the last war and after, many "Fat Extenders" were offered to the baking industry. A few were not so bad and very many were not so good ! In Austria there exists a law that no commodity may be put on the market which is not accepted by the majority of a committee of five scientists and thus included in the Codex Alimentaris Austriaticus. This law has been in force for many years : I think at least 70 years.

I used a fat extender very extensively which I made up myself when working in the bakehouse. For two years as production manager of a firm in the North West of England, I made 15,000 lb. of this extender every year and used it with good results in fermented and aerated goods, needless to say in Vienna and fancy breads, brioches, basic dough for Vienna plunder dough or paste (Danish pastries) and suchlike.

Ingredients :

- 56 lb. compound fat and/or cake margarine
- 17 lb. processed fine milled soya flour
- 35 lb. water
- 5 lb. glycerine
- 1 lb. salt
- $\frac{1}{2}$ lb. butter essence or poppyseed oil

Place the sieved soya flour into the bowl of an 80-qt. cake-mixing machine and add to it a few portions of water, with the machine running all the time in second speed. Next the fat or margarine is added in about 2-lb. lots, cut into thin slices. Thus a perfect amalgamation of the fat with the soya mash will be easened and accelerated. When all the fat is dealt with, add the salt, and glycerine and finally the poppyseed oil ; if the poppyseed oil is not obtainable use a good brand of butter essence. At the end of the creaming operation (always on second speed) the batter-like mass should be very light and creamy, coming almost over the top of the mixing bowl. Fill the extender into suitable containers and put it in cool storage.

Should the compound fat or cake margarine be brittle, such as like coconut fat (which often happens), hot water instead of cold must be used when making the soya mash at the start and more care must be taken when cutting thin slices of fat to ensure perfect blending with and dispersion in the soya mash. The nutritive value of this mix is beyond question and so is its technological value.

Lecithin—one of the most valuable aids in Vienna Bread Production

Lecithin is a natural flour, gluten, and bread conditioner of the greatest practical value in modern bread-manufacturing technique. Introduced as an emulsion into doughs, it will surround and lubricate the protein molecules of the flour. This fact is of the greatest importance for the formation and development of the gluten with definitely increased elasticity and swelling capacity.

Lecithin is a wax-like substance containing nitrogen and phosphorus, occurring universally in all plant and animal organisms as a vital constituent of the living cell. Chemically, lecithin is a lipoid and is distinguished from ordinary fats by the presence of a phosphoric acid radical in the molecule. In very small quantities it occurs in animal and vegetable tissues, as in the brain, spinal cord, and the entire cerebral system ; especially high concentrations are found in the reproductive cells of animals and seeds. Substantial quantities of lecithin are found in eggs, the roe of the fish, caviar, the marrow of our bones, and so forth.

Lecithin affects doughs immediately during mixing. It increases the dough's resiliency. Such doughs "stand up" to the severest mechanical "abuse" and go clean and easy through the whole set of automatic machines, such as divider, rounder up, brake, and final moulder, without trouble and signs of strain.

Furthermore, lecithin inhibits evaporation of moisture and skinning of doughs, with consequent decreased fermentation loss, and, finally, it increases dough yield. Better oven spring and better volume, with typical milk-and-fat-containing appearance of the baked products are noticeable features. The crumb is softer, brighter in colour with a velvet-like feel, and has a distinctly good and pleasant flavour. Lecithin counteracts staling and mould in any kind of bread product.

Suffice to say—quoting Mr. W. Spencer's M.B.E. statement (Flour Millers' Research Laboratories, St. Albans, Herts.) when he was Chairman at my demonstration at the Bakery Workers' Guild in London, April, 1934—"Lecithin is the best bread improver I have come across during the last thirty years."

My statement was, and is, "Lecithin will impart to flours the characteristic baking properties of best Hungarian flour of pre-war (1914) days !"

In the production of Vienna breads, breads *de-luxe*, rolls and yeast-raised goods of any description lecithin is the supreme fat extender and economiser.

Use of Lecithin Emulsion

The best proportion of lecithin to water is one to two. Weigh into a sponge whisking machine, one part of lecithin and half of

the total water quantity, at 140 deg. F., and whisk at top speed for 2 min. Add and whisk the balance of the water at the same temperature on top speed for another 5 min. Scrape the sides of bowl a few times.

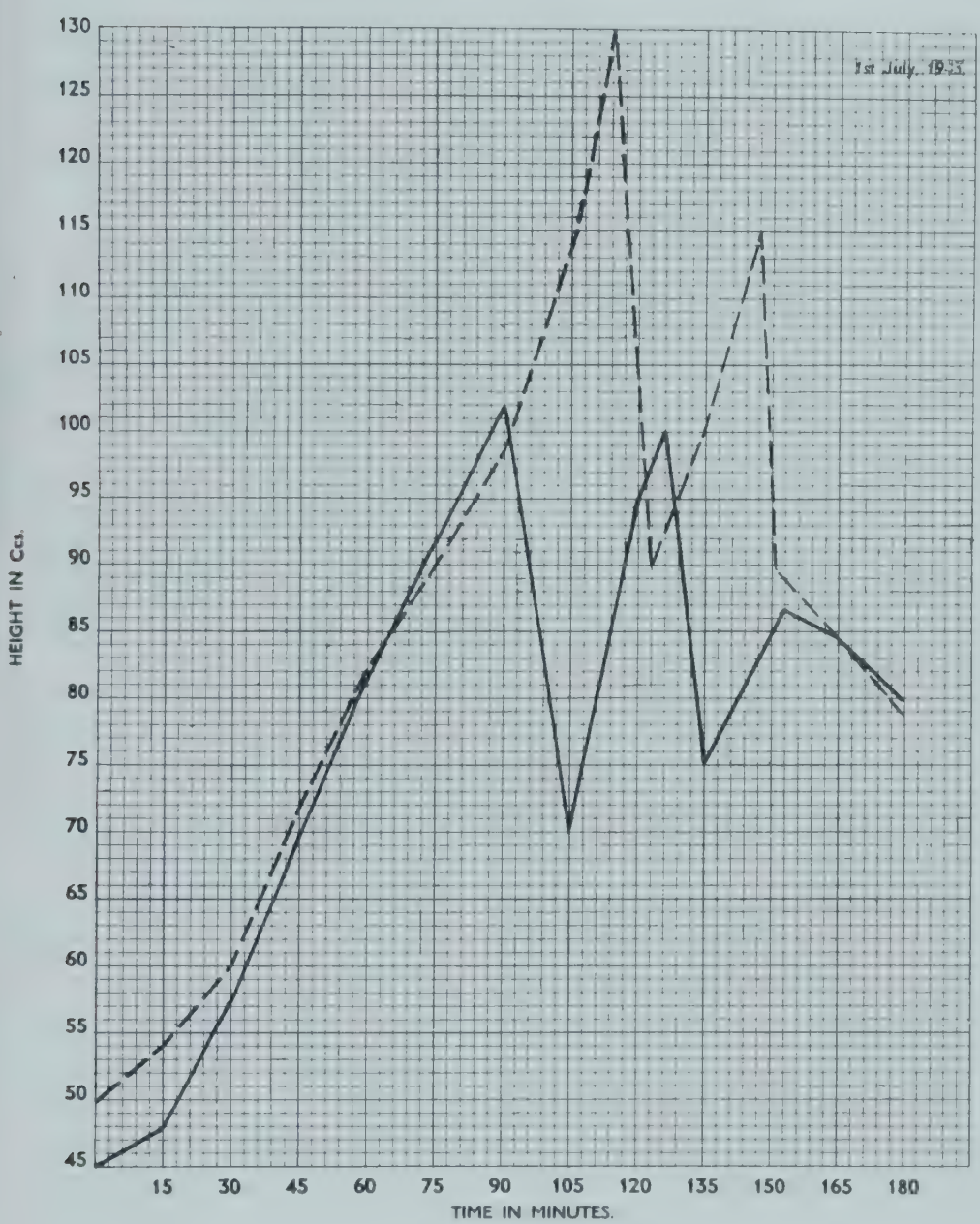
This emulsion is then ready for use.

Sufficient lecithin emulsion can be made for two or three days' requirements and stored. Lecithin keeps for months. In every gallon of liquor include 12 oz. of this emulsion.

LECITHIN

**Graph of Cylinder Test of Activity of Fresh Yeast
with and without Lecithin**

FRESH YEAST ————— FRESH YEAST & LECITHIN — — — —
THIS SHOWS THE STABILIZING EFFECT OF THE LECITHIN IN PREVENTING THE FERMENT
RAPIDLY BREAKING DOWN.



The most efficient method to utilise the 2 lb. of fat per sac (280 lb.) of flour for bread-making is to whisk the lecithin emulsion with the melted fat or oil and disperse the whole in sufficient doughing liquor to obtain a milk-like consistency.

For fermented goods such as Viennese pastries, brioches, Scottish cookies, buns, etc., 4 oz. lecithin emulsion plus 36 oz. water or milk will work well.

I am greatly indebted to Fredk. Boehm Ltd. of London, for the graph of cylinder tests of activity of fresh yeast with and without lecithin, showing the stabilizing effect of the lecithin in preventing a bun ferment rapidly breaking down. From this graph the beholder can draw his own conclusions and see at a glance the influence of lecithin in panary fermentation.

Also of interest will be their photo, published at that time in *The British Baker* of a French or Vienna loaf made with the inclusion of lecithin. I made these loaves at the St. Albans Flour Millers' Research Laboratories years ago. No milk, fat, or malt used, just lecithin as a flour food and bread enricher.

Potatoes in Vienna Bread

Preparation of Potatoes and the Use of Potato Flours

To use the potato as a valuable raw material in baking products is technically simple and, from a gastronomic view point, nothing new. An old-established custom among the people of the former Austro-Hungarian monarchy, comprising nine different nationalities, was the production of typical cake-like breads which were baked for Sundays, Feast days, or any special occasion, and which contained varying proportions of eggs, fats, and sugar, together with more or less substantial quantities of boiled and mashed potatoes.

When night-baking was abolished in Austria (1915), all bakers began immediately to make potato fancy milk breads to tie over the people for the week-end. These cake-like breads were to be found not only in every household, but also in the best-class hotels, restaurants, cafes and clubs. Readers who visited either Vienna or other Austrian cities will remember these delicious and tempting slices of light and moist fruit bread offered for breakfast or tea.

Boiling Potatoes for Mashing

The potatoes should be of the same size and sort, and should be scrubbed and washed before being packed closely into the pan or pot. They should not be injured or bruised in any way during boiling or the water will penetrate right to the centre of the potatoes. The latent heat, after cooking, would not be sufficient to throw off the water. There should be just sufficient water to cover the

potatoes. The lid must fit closely the cooking receptacle. For each quart of water allow $1\frac{1}{2}$ oz. salt. Bring the water quickly to boiling point, and keep it simmering until the potatoes are nearly done. For the last few minutes let the water boil rapidly. Probe the potatoes with a fork or the point of a french knife ; strain off the water and let all the moisture escape. Peel the skins, remove the "eyes," and press the potatoes, whilst still hot, through a 16-in. mesh wire sieve. Mashing may be done even 12 hr. after boiling or steaming, but in this case the skins must not be removed and the potatoes kept dry. As potatoes are not all alike, some kinds need nearly an hour boiling, whereas others are done in 20 min.

Using Steam Boilers

Bakers who have steam boilers (donkey boilers) can easily have made a simple contraption to steam or boil large quantities, previously peeled or pared with a centrifugal peeler. Large barrels or even milk churns into which a metal coil or pipe is inserted through which steam passes will bring the water quickly to boiling point and condition the potatoes properly, viz., cause them to become "mealy" and not waterlogged.

Pressing the potatoes through a sieve or mechanical pulping device is not a difficult matter. The mashed potatoes have to be put into wooden or metal containers (vats, flat barrels, or milk churns, etc.) whence they are moved to the dough-room. Many hundredweights of mashed potatoes I saw prepared every day in this manner, at the co-operative bakeries in Vienna, for the manufacture of milk, potato, and fancy breads and rolls during the post-war years 1919 to 1928 under the management of Director Michael Hackl, one of the finest craftsman and technicians Independent Austria produced, and whose friendship I enjoyed for many a year.

Potato Flour

Master craftsmen as Borella, Harris, Norwak, E. Schur, Ch. Schlehover, and C. Herman Senn made the use of "farina" (fecule pomme de terre) or in plain English, potato cornflour, popular among British confectionery craftsmen and chefs. Bread bakers use it to glaze their breads and rolls—the so-called "Vienna Wash."

It is a different matter altogether when we consider the utilisation of cooked and uncooked (dried) potato flours. If possible, we should discriminate and use for flour confectionery the best, which, without question, is the cooked, spray-dried potato flour. It is a very fine flour-like powder, free from foreign bodies and well-nigh safe from our old enemy the potato bacillus.

During processing the potatoes are cooked by applying super-heated steam and are freed from the skins by means of an extruder.

A liquid is made with the potatoes and additional water, which is atomised and sprayed into a heated chamber. The resultant potato flour passes through a sifter. The possibility of the presence of unwelcome substances is negligible. This potato flour has good water or moisture absorption properties and should become popular raw material in the making of cakes and fancy breads.

I found that the best way to use such cooked and sprayed potato flour is by scalding it with little more than its own weight of boiling water ; letting the mash stand for an hour or two, and using about 16-18 oz. of mash to every quart of liquor for the best quality fancy breads.

For cakes, especially those kinds made with considerable proportions of cornflour, 50 per cent. of potato flour and 50 per cent. of cornflour will give satisfaction. This goes also for the customary kinds of biscuits.

Uncooked potato flour, *e.g.*, sliced and dried in dehydrators and ground to flour—perhaps containing parts of the raw skins although washed previously—is a very good and economical substitute for rice cones in the bread baker's bakery. It has a low water-absorption capacity, its granularity is more pronounced, and only about half the quantity of potato flour, as compared with rice flour is needed in all the dusting operations.

Potato Flakes

Cooked potato flakes made by the roller process and ground into flour is not as suitable as cooked spray flour, but this flour, up to about 5 to 6 per cent. in national bread, will make a passable loaf.

As English potatoes contain nearly 80 per cent. of water it is an easy matter to ascertain the appropriate proportions of scalded potato flour mash for incorporation into a cake mixing.

An emulsion of potato flour, processed soya flour, and water, with a minimum quantity of vegetable lecithin and fat or oil, is something worth while trying for the bakers of quality and good-keeping bread.

CHAPTER II

THE ORIGINAL VIENNA OVEN

The old-fashioned Vienna oven, internally heated with logs and, when a flash heat is required, with faggots, is still holding its own in hundreds of thousands of continental bakeries. This Vienna oven is of simple construction with hardly any parts of iron or steel, except the oven door, the metal (copper) parts of damper caps, and the light box.

It is of historical interest that builders of this oven type in Austria for centuries past until this very day were compelled to be fully qualified bakers, who, after serving an apprenticeship as a baker, had to learn for two additional years the trade of oven building.

The Vienna oven without an exception has a sloping sole of horse-shoe shape, the round semi-circular bend of it at the far back of the baking chamber. It possesses a very low crown in comparison with baking chambers of modern types. These, the sloping sole and the low crown, are two characteristic, outstanding and typical, distinguishing features of the Vienna oven, even of the latest make. These two important features cause a third not less important one, namely, the creation and retention of the humid atmosphere in the baking chamber.

The oven sole proper begins at the upper end of the oven breast, about 12 in. long and rising at an angle of 35 deg. The oven mouth is on a level with the eyes of the upright-standing operator, of average height, and rises gently at a gradient of 10 deg. towards the horse-shoe bend at the back of the baking chamber. The baker works without stooping, which is not only convenient but also tends to make for speed in setting and drawing. Furthermore, he can see at a glance the position of every loaf or roll and follow every phase of the baking process.

The sole of the old Vienna oven consists of loam which is well beaten down to a mirror-like smooth surface by the oven builders by means of heavy copper trowels. It takes fully six hours to fire the renewed oven sole and another three hours "laying down" to be in condition for baking. Six days of careful, gradual, and systematic firing is the time required for a newly built oven to be ready for a start.

Beneath the 3 to 4 in. layer of solid, baked loam is a considerable layer of gravel and, underneath the gravel layer, a layer of granite, sandstones, and similar heat-retaining material (not any rubbish). The air between the stones and gravel, etc. is a good heat conductor, as good as the gravel itself.

The crown and the sides of the oven are solidly built with best brick or/and chamotte tiles. The logs and faggots (in hotels, champagne and brandy or whisky boxes are quite frequently used) burn on the oven sole near the oven mouth. The flames circulate round the baking chamber, three flues in the front and above the oven mouth serving also as dampers which can be closed with iron or copper caps and function as heat regulators and outlets of smoke, fumes, and combustion gases.

These Vienna "loam" ovens (lehm-ofen) not "steam" ovens as the Viennese bakers name them quite correctly, were adapted to coal fire for heating in the nineties of the last century. After heating of the oven and raking the remnants of the fuel through the iron bars on to an ash pit underneath, an iron or steel plate, closely fitting over the fire bars, makes the oven sole level.

Another vitally important feature of every Vienna oven not to be dispensed with is the construction of the oven mouth. When opening the oven door, one confronts an upward slope of about 12 in. in length at an angle of 35 deg. or thereabouts. The low crown, as already pointed out, is of no less importance and descends from the back of the oven to the oven mouth so near to the oven sole that there is just sufficient space left for the oven man to set the rolls or loaves with the wide 16 in. by 24 in. Vienna peel, or give free play to the slip peel. A baked, open 2-lb. tin loaf has to be turned on one side for drawing. The escape of steam is of no consequence because the volume of it is very small. This century-old type of Vienna oven was—and is still in the majority of cases—without any steam-generating or supplying device.

Because of the ingenious though simple construction of the oven there is no necessity for it !!! The position of the baking chamber, the sloping oven sole, the low crown and the low position of the oven mouth permit the creation of a generous development of steam ! It is not steam at all in the generally accepted conception of steam. This mist-like wet vapour or "swath" (Schwoel in the Viennese dialect) is caused during the scuffling of the oven sole.

The scuffle for the old type Vienna oven is indeed a unique and extremely heavy one. Better let me describe it and its function. Any doubts about what kind of steam is required for Vienna or French bread baking will be dispelled after reading this paragraph.

The scuffle is at least 24 in. longer than the length of the oven chamber. It is tapered towards one end and 4 in. in diameter at

the other. A good sized bundle of dry reeds or straw, tightly strapped together round the middle with a thin rope, is the scuffle head. The tapered end of the scuffle pole (resembling an oar of a rowing boat) is forced through the centre of the bundle of reeds or straw. A heavy, round block of wood, usually a foot piece of the trunk of a tree (2 ft. in diameter) hollowed out in the middle, is used by the baker to force the reeds bundle along the scuffle pole as far as it will allow. Then the pole is stood on its thick end and the reeds bundle, with the heavy block of wood on top of it, rammed with force right down to the bottom end of the pole. The scuffle head will resemble a chimney sweeps broom only it will be much larger in circumference ; fully one yard. After removing the ashes, the scuffling of the oven sole follows, with the purpose of not only cleaning the interior of the oven from stray ashes at the back but taking off the raw heat of the sole and supplying sufficient "swath."

A fair amount of water enters the baking chamber with such an instrument. By rotating the scuffle and giving it several complete turns the sides of the baking chamber and the lower parts near the landing of the arch and the sides of the crown are liberally sprayed. The necessary humidity—"swath" or wet vapour, erroneously called "steam"—is produced, and forms the ideal environmental condition for the comparatively cool loaves or rolls to be perfectly glazed.

As I am not writing a treatise on crust-formation I use the colloquial of our craft which every reader will understand. I cannot resist the temptation to ask the doctor-author of a book on bread-making published about ten years ago : "Is super-heated steam for the baking of Vienna bread really necessary or even misapplied ?"

My purpose of describing these peculiar functions of the old type of Vienna oven is obvious. I did this deliberately in all its details because there are so many divergent views and opinions. I trust that everybody who has read the above will now understand the primary principles and peculiar characteristics of the Vienna oven, its source of "steam" supply, the nature of it, and the reasons for a sloping hearth with the low crown and the oven mouth with its rather steep rise to the oven sole proper.

No steam boiler or steam-injecting apparatus is necessary for this type of steam-trapping oven. The wet vapour or mist cannot escape as it is efficiently trapped, due to the construction of the front part of the crown and oven, the oven mouth and oven breast (the 35 deg. upward gradient to the sole as described).

Granted, very often a cold water spray by means of a syringe is applied when rolls on baking sheets are set as first batch.

A light box is fixed near one of the sides of the oven door.

Paraffin, acetylene, gas, or electric lamps serve for lighting the interior of the oven. For the past fifty years as I can recollect, built-in light boxes to be operated from outside have been in existence.

Lest I forget, there is always a kind of diminutive garden fishpond filled with water for scuffling the oven. It holds 20 to 30 gall. and is filled, emptied, and cleaned twice or three times a week. It is never on the same side of the oven as the light box and it is flush with the floor.

The single-deck Vienna oven is built either directly on the floor of the bakehouse or several feet below it. In the latter case the baker stands in a pit ; he never needs to stoop or crane his neck when working at the oven.

Double-decker Vienna ovens have the baking chambers in a staggered position, *i.e.*, the vertical sliding or swing in oven doors of both chambers are not on top of each other, but beside one another, one to two foot difference in the horizontal and vertical.

This arrangement, for more than half a century in practice in most of the European countries, allows two bakers to work at the same time on the same oven, independently ! One of the oven men disposes of his loaves, rolls, baking sheets, etc. to the right side of the oven, the other man sets his goods or disposes of them to the left. There is no interference with each other. Not one loaf or roll touches the bakehouse floor. The oven man in the pit puts everything he draws on a wooden or iron grid table, whilst his assistant deftly removes them. The setting is performed in a reversed manner. On the other side stands the operator in a normal position and carries on with the oven work simultaneously with his colleague in the pit. He does not need to crane his neck or to stand on a platform.

I feel it is rather inconsiderate on the part of the oven builder to compel the baker to perform acrobatic feats daily for hours in an abnormal position. Many good and practical features of the old internally heated oven should have been adopted with the more advanced hot-air or steam-pipe oven. I never could understand the aversion of oven builders against the staggered two-deck oven with pit. I am embarrassed when I am shown with great pride a new and up-to-date Vienna oven which lacks built-in oven lights, suitable steam arrangements, and possesses an awkward swing oven door.

Very rarely have I met operative bakers who have raised objection to pits when interrogated. But positively they objected to the irksome stooping to low-built oven soles and to the awkward elevated position on a platform. British and Continental bakers of the older generation, who work on wood-fired ovens with loam, granite, or chamotte oven soles, hold the unshakable conviction

that bread baked in them is superior in flavour and taste to bread baked in any other type of oven. Personally, I support this view with all my heart, as a craftsman who chose his vocation and is proud of it. But alas, we do not make bread nowadays from a craftsman's point of view.

Craftsmanship seems to be in the decline. Modern mass production ousts craftsmanship by inducing the city dweller—whose discriminating instinct of smell and taste of gastronomic creations is already semi-paralysed to an appalling degree—to accept a total mechanically manipulated edible product without provoking the saliva or the gastric juices.

Hot Air and Steam Pipe Ovens

The hot air Vienna oven with built-in, steam-generating device and light box, the sides and top of the baking chamber steel plated, single or double deck, and pit was the next development. The advantages of this new type over the old-fashioned, internally heated oven are well known. Continuous baking, cleaner fuelling, and easier work all round will bring about the elimination of the oven of our forefathers.

Such a “modern” hot air oven was in operation at the Emperor of Austria Jubilee Exhibition in Vienna in 1898. As an interested visitor, I saw this oven (then the newest type) in the exhibition's bakery section used by expert craftsmen who displayed their skill in the art of making Vienna bread and rolls from a variety of fifteen to twenty doughs.

Herr Ludwig Franz, the organiser of the Exhibition bakery, then a prominent figure in the social life of Vienna, received the golden service cross from Emperor Francis Joseph I. By the way, Herr Franz was godfather to my youngest son. Thirty years later, I baked on this exhibition oven when I was general manager of the famous Court Bakery firm Uhl-Breunig (1928).

Of the hot-air Vienna ovens in Great Britain, I found 90 per cent. with a too gentle sloping sole. I also missed the steep gradient of 30 deg. from the oven mouth's base up to the oven sole proper. Therefore, the gap between the top of the oven mouth and the bottom of the oven door when elevated was too big and in my view too large a volume of steam escaped when the oven door was frequently opened, so necessary when setting Vienna bread and rolls.

Even to this day I miss in the hot-air and steam-pipe ovens, built-in steam-generating devices, by means of which merely by turning on a tap one can obtain the desired volume of steam at any time without filling a tank, using a steam boiler, and suchlike. I mention these points with deliberation. I want to impress with all

emphasis bakers who intend to make Vienna bread and rolls rationally.

For all that, hot-air and steam-pipe Vienna ovens are very efficient and suitable for baking first-rate Vienna bread and fancy breads and for that matter all classes of fermented goods. This applies to oil- and gas-fired ovens of the Vienna type as well.

As all continental bakers, I prefer a square baking chamber to a long one, as it is easier for the operator to set and draw.

Drawplate ovens give quite good results. There is now a specially constructed travelling oven with steam control which turns out perfect Vienna loaves.

Fellow members of the craft remember at all times the old saying of Vienna bakers : "The oven is the soul or heart of the bakery !"

CHAPTER III

FERMENTATION METHODS IN VIENNA BREAD-MAKING

Judgment, experience, close study, and observation, combined with skill and artistry of the craftsmen are the Alpha and Omega of successful fermentation in Vienna bread production.

Sponges

With a few exceptions, the “off-hand” or “straight dough” system in the making of Vienna bread and rolls is the established custom in Great Britain.

Before going any further we have to survey the position of the baking trade some forty or fifty years ago. Foreign bakers of many lands came to this country, particularly to London. Incredible as it may seem—though it is only too true—nine out of ten were not bakers at all ! Some of these young men were trained in other trades, but the majority left their native soil, which had no room for them, to find employment in bakeries of London, picking up knowledge as much—or as little—as they were able to, working night and day many hours, for a mere pittance.

The “cream” of these foreign “bakers” was ever ready to grasp the opportunity to get a job as a “French baker.” The foremen of many bakeries forty years ago often enough were *bona fide* French or Vienna baker craftsmen and quite used to face and solve the two-horned dilemma—either to train the amateur pseudo-baker, and turn out quality goods as their professional pride and honour urged them—or to adopt the so much easier ‘laissez-faire’ attitude, to get through the work at the expense of quality.

As I said at the beginning there were exceptions ! Those men who were craft-guilds-trained did not deviate one iota from the rigid traditions of their corporate professional body. They worked with youthful enthusiasm in following the many centuries-old custom of the guilds to go abroad into foreign lands, to gather experience, to learn, and to broaden their outlook of life. These genuine guild bakers were the pioneers of Vienna bread in this country and the whole world.

The high standard of quality craftsman and mastership of

renowned establishments bear witness of their prolific activities more than fifty years ago.

Off hand or straight doughs are not favoured in these bakeries, neither are they in Cuba, Cairo, or—Edinburgh !

I deeply regret to say, however, that the influence of the amateur-pseudo-Vienna bakers and the take-it-easy attitude of professional craftsmen made itself felt to such an extent that even to-day British bakers of the highest reputation apparently do not know what Vienna bread really is—judging by their divergent definitions on this subject.

Vienna bread and rolls of all descriptions and classes of best-eating qualities and of the highest standard are made with sponges. That is an indisputable fact !

Expediency and other reasons—the most deplorable one I outlined above—account for the predominance of the straight dough whether in making Vienna bread or any other class of fermented goods. To mention making sponges nowadays is taboo. But sponges and real Vienna bread were and still are inseparable.

Judicious choice and combination of raw materials and ingredients, the appropriate fermentation method for the particular class of bread or article to be produced, temperatures, times, and continual observation, constitute “the hidden soul of the art of Vienna bread-making.”

In these pages I do not even attempt to give scientific explanations—there are more competent men in our industry than myself to do this. To preserve the proven standards of the past I maintain is one of the primary functions of the education and training of craftsmen. I confine myself entirely to practical methods which have stood the test of time, handed down to us by our masters. We may have made alterations—not improvements—adapting these well-tried processes to changing conditions, environments, new raw materials, and new equipment.

I have to beg the reader's indulgence in stressing certain points at some length, but he may rest assured that years of experience justify my dwelling on seemingly trifles which are important, essential, and show the right road to success.

I shall chiefly deal with sponges which are known as flying sponges of a duration from 15 min. to 1 hr. or thereabouts. The consistency of the sponge batter varies according to what kind of roll is intended to be made. I shall give the working method with every formula and an explanation from the practical baker's point of view.

The reader will find that the proportion of sponge liquor to the total liquor used, which I take as basis, and the temperatures of it vary according to the season.

Generally speaking, 40 to 60 per cent. of the total liquor we

use in the sponge, and the balance of it for the doughing stage. During the summer, when flour becomes dangerously warm and tap water may register more than 70 deg. F., 33 to 25 per cent. of the total liquid is used for the sponge. Quite safely, as borne out by long practice, one-sixth of the total liquor can be used in the form of ice to obtain a dough temperature of 68 to 72 deg. F. suitable for the production of certain rolls, fermented pastries, and cakes, etc.

As the outdoor temperature decreases, we bakers have to increase the volume of the sponging liquor and so arrive in cold winters with 66 per cent. of the total liquor in the sponge. In specified cases, Vienna bakers use even 90 per cent. of the liquor for the thin batter sponge or Poliche, as Austrian bakers call this cold ferment, and in particular cases all the liquor must be used for the sponge.

The sponges are ripe when air bubbles appear on the surface of the sponge and begin to break. At this critical stage the sponge is on the verge of dropping. The shape of the sponging vessel, tub, bowl, etc. or the quality of the flour have a certain influence on the dropping of the sponge ; therefore, careful observation and experience are the only reliable guides.

Only in a few cases—except the 4-hr. and longer, slack-batter sponges, or “Poliche,” will crop up in which we let the sponge drop. Usually the same weight of flour as liquor is used for the sponge. If more than one kind of flour is used, good blending and sieving must not be neglected. For sponges laying longer than one hour, use the stronger flour. Where and when necessary I shall give the varied proportions of flour and water for the sponge.

It is of the utmost importance that a sponge be correctly made : namely, well beaten or slapped into a perfectly smooth batter and at the correct temperature.

Making a Vienna Sponge (Dampfl)

Break down the yeast into small pieces like crumbs, add the malt extract (liquid or dry), a small proportion of the sponging liquor at 50 to 60 deg. F., dissolve, and let stand for not longer than 10 min. No flour must be added to this preliminary solution or starter-mix. Before making the sponge strain it through a suitable sieve attachable to the mixing bowl or trough, add the balance of the sponging liquid, also its own weight of flour (or more as may be stated) and subject the lot to a vigorous beating up action either with both hands, or in a cake machine by using the beater but not the hook.

For large-scale production the sponge stirrer as used in Scotland is the ideal and efficient machine.

The beating or slapping action must be heard and has to be continued until the batter becomes a smooth mass and air bubbles appear. I deliberately abstain from describing this procedure in so called scientific terms or nomenclature, as I am merely a craftsman.

With a large sponge it is hard work by hand, but it is of paramount importance. For example, a sponge consisting of 8 gall. milk and/or water plus 80 lb. flour will have to be tackled by two men. The open-pan type dough-mixing machine, whether with one or two arms so serviceable for mixing doughs, is not at all suitable for beating a satisfactory Vienna bread batter sponge. A sponge stirrer as mentioned is the right thing for obtaining results.

A master baker friend of mine, Mr. Harry Crisp, had in one of his bakeries in Hertfordshire an excellent dough-mixing machine of a special type made. He beat up his sponges and also made the doughs with it.

After the sponge is made, the sides of the tub, bowl, pan, or trough have to be scraped clean of any adhering batter. In order to observe the development of the sponge to its desired stage of maturity, the surface of the sponge has to be covered with a liberal ($\frac{1}{4}$ in. thick) layer of flour. This prevents skinning and protects from injury through draughts.

In bakeries where several sponges are set for various kinds of breads, rolls, rusks, and fermented specialities, the advantage of covering sponges with a layer of flour instead of with lids, dough cloths, or not covering them at all (such things did and do happen) are obvious. The progress and degree of ripening can easily be ascertained. It needs not more than a glance by the foreman or doughmaker. The inhaling of gas, removal of lids or cloths do not inconvenience the baker; he has the sponges continuously under observation and control.

When a sponge is ready to be taken, either pour the balance of the total liquid into the sponge adding the salt at the same time, or put the sponge into the dough mixer with the doughing liquid (milk or/and water) and clear the sponge. A smooth glossy batter without the faintest trace of flour lumps is the result: the mixing of the dough can begin.

When mixing large quantities of full cream, or for that matter, skim milk, for sponging purposes, the churn of milk should be placed into a vessel containing boiling water, say, in a water bath on a large gas cooker. Stir the milk in the churn a few times until the required temperature is obtained; a thermometer fixed by a string to the edge of the churn should be immersed in the milk. That is the Viennese bakers' custom to get milk ready for sponging. In Vienna or Austria the winter is sometimes so severe that the milk is one frozen lump in the milk churn.

I remember such a winter very well in Vienna in 1928. It was Christmas Eve. I used 250 gall. of such defrosted milk for sponging and mixing the doughs. During 12 hr. I made 45 sponges by hand in a one-sack-sized, open dough pan and mixed the doughs also with a one-arm dough machine.

For hand-made doughs, the proper way to make a Vienna sponge is as follows : Put the sieved flour into the trough and near one end of it. With two table brushes or scale plate and table brush press the flour firmly together thus preparing a print or dam, and allowing sufficient space for the sponge to rise. The necessary flour the operator cuts away with the hand carefully, from the flour print or dam. The yeast and malt are well dispersed in the sponging liquor and strained into the trough or machine before adding any flour. This straining of the dispersed yeast liquid is not necessary if the yeast was wrapped in paper. In summer time not straining yeast from jute bags may be the source of serious trouble. If the flour print is made near the left end of the trough, the operator slices or shaves with his right hand sufficient flour from the print, draws it into the sponging liquor, with both hands performing an alternate paddling motion. If necessary, more flour can be drawn into the sponge batter with the right hand until the sponge has the required consistency. The sides of the trough or bowl, etc., are scraped clear from any adhering batter (not forgetting the hands) and the surface of the sponge will be covered with a good ($\frac{1}{8}$ in.) layer of flour.

Poliche

As the name indicates, the method is of French origin, but still is in favour in many parts of Austria. The Poliche is a very thin batter sponge which is used for definite reasons. Economy, convenience, a longer-lasting crispness of the crust in certain rolls, ability to bake the rolls in the first batches at a higher temperature than customary—namely, 480 to 500 deg. F. instead of 430 to 380 deg. F.—and also to counteract the too intensive and colouring tendency of too smoothly milled flours.

More Latitude !!

This is one of the reasons why many bakers at some time complain about their Vienna or French loaves and rolls having a leathery crust.

The Poliche is the most reliable remedy for this undesirable occurrence. It consists generally of ten parts of water and seven parts of flour. Generally, 80 to 90 per cent. of the total liquid is utilised in the poliche. This thin batter sponge made at a temperature ranging from 72 to 76 deg. F. ferments for 4 to 8 hr. until

it is ripe (drops). A poliche can be set at a convenient time and will mature whilst most of the other kinds of breads and rolls are being made and baked.

It is a matter of routine and rational workshop management to have the dough made, fermented, handed up, the final shapes formed, proofed, and conditioned to be baked when an oven is at the disposal at any time during the night or the day. Here we have all the advantages of a sponge dough at a lower temperature than usual and using an oven at an unusually higher temperature for this kind of bread and rolls.

Less yeast is used and we obtain a lasting crispness of the crust, and a fine silky and good colour crumb with excellent texture and taste. Furthermore, any odd pieces or scraps of bread doughs left over, steeped in cold water we can use in the poliche. Such procedure and economy will only add to the pleasant-eating qualities and enhancing enormously the flavour of the baked loaf or rolls, especially the tapered, shuttle-shaped French loaves.

There is another interesting feature about flying or thin batter sponges ; they enable the baker to face and overcome unforeseen eventualities, such as lack of oven space for another half an hour or so, or *vice versa*. He simply adds the balance of the doughing liquor at a lower or higher temperature as the circumstances demand and adding more yeast if desirable. The baker can meet unexpected requirements with promptness in making from one mother sponge three or four different kinds of doughs with different ingredients, each resulting in an entirely different looking and eating product.

He can also speed up final proof without extra yeast by using 50 per cent. of the total yeast quantity in the sponge and the balance in the doughing liquor. The yeast, introduced at the doughing-up stage, will give the dough more life, the shapes will proof more quickly, and the loaves will turn out bolder. This practice has been in vogue for the past thirty years in Vienna. I showed this method at a demonstration at one of the largest bakery schools in England and scored over the straight-dough-processed loaf. A teacher of the school made the straight dough bread and I the sponge dough loaf at the same time. The fermentation method scored over the manipulator.

I would like to mention another modified French fermentation method, the working formula and technique of which I will give at a later stage in its appropriate place. A certain quantity of old dough—it may be stored in a cool place or refrigerator for 18 to 24 hr.—is broken up and dispersed in tepid water then made into a thick batter sponge. The fermentative activity of the yeast in the old dough is revived and excellent French rolls and loaves made with this leaven method result. There is no trace of acidity ;

ust the fascinating flavour and aroma of bread, so regretfully absent in short processed breads and rolls, comes to the fore.

Old roll dough, deliberately kept for the following day's production, will be found to be a splendid improofer for the production of the ordinary cob or tapered water rolls, misnamed in London and districts, Vienna rolls.

The old dough, after pulling it into small pieces has to be soaked for about half an hour in part of the doughing water. Before mixing the dough the pieces of old dough have to be well dispersed in the water, which means a few minutes of intensive work with both hands. To every gallon of water, 4-8 lb. of old dough may safely be used. Such procedure will give definitely superior results, viewed from every angle, than from a straight dough

This applies only to French loaves (sticks, fendu, couronne, galette) and rolls made with water as doughing liquid without the addition of enriching materials.

I shall describe two fermentation methods for making Vienna rye bread (not German black bread) which will be of interest and benefit to the British baker. One, a two hours sponge process, the other the typical leaven process as customary in Vienna. These rye breads are really made from a blend of white rye flour and a darker wheat flour. The two hours sponge processed bread is sweet to eat, whereas the bread made with leaven has a slight acid taste, which resembles the typical Scottish bread. Viennese rye breads are by no means the stodgy sour black breads of Northern Germany—they possess a greyish crumb, similar to the old-time standard bread of Lord Northcliffe fame.

Temperatures for Sponges and Doughs

To find the temperature for the sponging liquid I employ the well-known method in use all over Great Britain, viz : Double the required temperature for the sponge and deduct the temperature of the flour.

To find the temperature of the doughing liquid when using a sponge, I treble the required dough temperature and deduct the sum of the flour and sponge temperatures, and finally deduct another 5 deg. For instance :

Required temperature of dough		= 72 deg. F.
Multiplied by 3		=216
Sponge temperature	80 deg. F.	
+Flour temperature	60 deg. F.	— 140
		= 76 deg. F.
		— 5
Temperature of doughing liquid		= 71 deg. F.

It is obvious that environmental condition, *e.g.*, the temperature of the doughing and storage rooms as well as the bakehouse, have to be heeded. Once more, practical experience is the great teacher and unceasing close observation the most reliable assistant.

The correct dough temperature is a relative term. The correct dough temperature for, say, English bread doughs is quite unsuitable for Vienna bread. There is no argument about this. Bakers who are working with doughs at 80 to 82 deg. F. and quite often higher, would consider a dough of 74 or 76 deg. F. a "cold dough." There is not the least doubt that in cool doughs—and this applies to all wheat flour doughs for household bread—biological and chemical processes occur which result in producing in the baked loaf or roll an aroma, flavour, and moistness of the crumb which are absent in similar products made on different principles and at higher temperatures with less yeast and, furthermore, less salt.

General opinion seems still to be abroad that cooler doughs necessitated a long period of fermentation. In Vienna, all doughs are made really cold, but they are always ready for the oven within 3 to 4 hr. from setting of the sponge. All the manipulations with about seven to fifteen different types of doughs are repeated three times a day. The adoption of lower dough temperatures than customary will definitely tend to increase bread consumption. To make the public eat more bread and dispense to a certain degree with breakfast foods, the baker must tempt with well-flavoured and keeping bread, of a variety of shapes and different tastes. The consumption of bread will not be increased by merely wrapping or/and slicing or making one or two kinds of dough, a stiff and a slack one, without building up the dough with different ingredients.

The Floating Sponge

Personally, I am not in favour of the obsolete floating sponge which was practised more than forty years ago by French and Swiss confectioners and patissiers in this country. To me it seems an unsuitable environment for the yeast cells, which, only too often, become exhausted. This is accentuated by the collapse of the sponge, sometimes and even frequently, causing insipidity and dryness of the crumb.

I worked this method many years ago but I was forced by superior results to give preference every time to the batter-sponge technique and using fast yeast. Sponge and dough temperatures can be easily predetermined and controlled when quantities have to be produced, but a small patissier or pastrycook may still adhere to this method of fermentation as a hobby or idiosyncrasy ; I fail to see any advantage in it but for those to try their hands in this procedure, I give the following data.

Use $\frac{1}{5}$ to $\frac{1}{4}$ of the total flour quantity with 55 to 60 per cent. of liquor (water or milk), mould into a round shape, cut across the top like a coburg loaf and immerse in lukewarm water. Cover up the container with a lid or cloth. When the sponge piece has risen to the surface of the water, mix into a dough or paste of suitable consistency with the other ingredients. Some pastrycooks used to make a dough with the various ingredients and the balance of the liquid, usually eggs, then worked the sponge into it. There were quite a number of dough-mixing methods in existence.

For those who are interested and like to try this method, here it is :—

French Brioche Dough

(i) Floating Sponge :—

1 lb. flour

3 to 6 oz. yeast

$\frac{1}{2}$ pt. lukewarm water

$\frac{1}{2}$ oz. sugar (raw)

Make into a smooth dough, mould round, cut across the smooth top like a coburg loaf, and put it into a pan of lukewarm water. When the sponge rises to the surface, it is ripe and ready for use.

(ii) While the sponge is rising make a dough by whisking together.

2 pt. eggs

2 oz. sugar (raw)

$\frac{3}{4}$ oz. salt

(iii) With about $\frac{1}{8}$ pt. cold milk mix $4\frac{1}{4}$ lb. of flour with the egg mix. Into half of this dough, work 3 lb. of butter and finally :

(iv) Mix this dough with the half of the dough without butter and the ripe sponge into a smooth, homogeneous paste, by slapping and patiently mixing and kneading.

This dough may be rested in an icebox or refrigerator overnight and worked off when required. Who can afford this in this age of speed—well, he is welcome to it.

Predetermined Half Sponge Process

(20 min. duration)

Use 50 per cent. of the total liquid (water and or milk) employed in the sponge ; the other half for doughing. The quantity of flour should be equal in weight to the sponging liquid. Disperse and dissolve the yeast, malt extract or sugar (solid or invert) in part of the sponging liquid, and make a smooth batter sponge with the allotted flour by vigorously beating or stirring (not machine). Protect the sponge from draughts. The sponge is stirred a second time after exactly 5 min. Repeat this procedure twice in intervals of 5 min. After 20 min. from setting the sponge, start mixing the

dough by adding the balance of liquid, the salt, fats, sugar, dried milk (dissolved), and the remaining flour.

One of the finest craftsmen of England wrote in *Confectionery and Baking Craft* thirty years after reports of my demonstrations and lectures appeared in *The British Baker* : “What appealed to me most in this system of sponging was the fact that the yeast has no time to spend itself but is kept vigorous and full of life all the while and at the moment of taking, is full of activity, thereby ‘giving full value in the doughs’ in which it is incorporated, whereas the old style allowed the yeast to work itself almost to death. Therein lies the chief value. And an equally important feature, that this system or method reduces the time factor to a known limit, which is of immense value !”

And a third important feature of this predetermined sponge process is that the baked products are of a pronounced exquisite flavour, aroma, and have moistness of the crumb. How could it be otherwise ? With the large amount of sugar and the high temperature of the total liquor employed in the ferment (old style) overfeeding of the yeast cells occurs, accentuated by an unsuitable environment, and thus causes a premature collapse, slowing down of activity, and the inescapable sequence—dryness, insipidity, and often acidity of the baked crumb, whether bun or roll.

The predetermined half-sponge process is foolproof, provided suitable temperatures, correct times, and equitable yeast quantities are employed. For Continental fermented goods, such as Parisian, Vienna crescents, Danish Vienna bread (pastries), brioches, bath buns, cookies, etc., optimum dough temperatures from 77 to 72 deg. F. are the best.

For ordinary household bread, a sponge temperature of 83 deg. F. and dough temperatures of 68 to 80 deg. F. are practical and produce a first-class flavoured, bold, and well keeping loaf.

Long ago, in 1912, my object was to work out a level in panary fermentation applicable to all classes of yeast-fermented goods. To the astonishment of my audience at Mr. Harry Bamford’s bakery in Hammersmith, London, 12½ per cent. of the cold doughing liquor in the form of crushed ice, the latter thrown into the sponge, did not stop the activity of the yeast—the old superstition—that ice kills the yeast—was killed. In 1950 the British baking fraternity was quite agog with the “new fangled idea” of refrigerating or retarded doughs.

Milk in Sponge Doughs

It is a safe and sound procedure to make the sponges with one-third of the total liquid ; the doughing liquor contains or can be entirely milk.

Sour milk the Vienna baker never throws away. Its uses are many. Sour milk should be used only in the doughing stage, never for the sponge—the sponge must reach its full ripeness. The dough has to be kept under special observation owing to the action of lactic acid. Such doughs will have to be taken sooner than normally. The best sponge temperature is 73 deg. F. : needless to say, fancy breads made with this method and containing sour milk will not develop rope. During the war years I utilised hundreds of gallons of sour milk every week during the summer for the ordinary household loaf, and turned out first-class bread with a lovely flavour.

But should it happen that such a dough gets overwrought a few quarts or gallons of water, commensurate with the size of the dough, should be added plus the appropriate quantity of flour and salt, and the dough remixed. This dough will be ready to be taken in a very short time ; good results are to be expected.

My Vienna Condition Process Doughs

(Demonstrated in an Essex bakery 18 years ago).

3 gall. dough (2 hr.).

Sponge :

3 qt. water 62 deg. F. $\frac{3}{4}$ lb. yeast (fast)

7½ lb. flour 60 deg. F. 3 oz. malt extract (syrup)

Made into a smooth batter sponge at 68 deg. F. Mix it into the dough half-an-hour after setting the sponge with :—

40½ lb. flour

6 oz. dried milk

9 qt. water 88 deg. F.

4 oz. soft pieces sugar

6 oz. yeast

15 oz. fat.

13½ oz. salt

Add the fat when the dough begins to clear during mixing and dredge salt over the surface of the dough. Mix into a smooth, homogeneous dough with a temperature of 71 deg. F.

First knock back 1 hr. after dough-mixing ; second knock back 20 min. after first. Scaling off half-an-hour later.

Start to set rolls 3¼ hr. after setting sponge.

Yield : 48 loaves at 14 oz. 9 presses at 4 lb. for 3-doz. rolls.

Result : Very fine typical Hungarian flour rolls ; very crisp, cream-tinted and glinting crumb, very bold.

A still better roll can be obtained with the incorporation of 1½ lb. lard or fat. The yeast may be halved for the sponge and half the quantity used when doughing.

CHAPTER IV

THE OFF-HAND OR STRAIGHT-DOUGH METHOD IN VIENNA BREAD-MAKING

Vienna bread and roll doughs in Great Britain are rarely made by any other method than the off-hand one, which practice I regret.

The small cob and large baton-shaped Vienna loaf, typical French, water-dough rolls, are the popular varieties made by bakers doing a mixed trade. This would not be so bad but large leading bakery firms producing big quantities and a variety of shapes, also use the straight-dough method, and their productions are accepted by the public as the genuine article.

These rolls may look like Vienna rolls but they lack that irresistible appeal to the senses of taste, smell, touch, sight, and sound ! Nay, these "things" only too often paralyse them ! They are, in fact, just a roll. I admit they resemble the common water dough-roll—"the cobblers" roll (Schuster Laiberl) as they are nicknamed in Vienna, but only resemble. There remains nothing that we associate with good bread or with "Man's brother" using Hilair Belloc's simile, when we eat these productions. They are as hard as flint, blown up, and have an insipid, sawdust-like crumb.

Speaking with a life-long experience in this highest province of bread-baking, straight doughs for Vienna or French bread are not given the attention and painstaking care which are necessary to obtain results worthy of a craftsman.

The straight dough may be quite good and useful, but should not oust the sponge doughs. In Vienna the straight-dough process is very well known as "Bohemian" dough. I remember "Bohemian" doughs fifty years ago being made when sudden, quite unexpected orders had to be executed, at short notice. Within an hour or two after delivery the rolls were eaten and the reputation of the baker was in no danger.

There is no need for the British baker to be an expert Vienna baker, but he should be able to make Vienna or French rolls, not forgetting the other varieties of breads *de luxe* as described in these pages, without dropping into the many pitfalls which are in store for him, if he has to grope his way to the light, without a tutor or reliable guide. The average British baker possesses sufficient knowledge and experience of fermentation to make excellent Vienna

bread and rolls and to compete with all comers if he follows the advice offered to him in these pages.

It may be of historical interest to know why the straight dough process is called the "Bohemian" dough method by Austrian bakers. Until 1866, when Austria and her southern German allies, Saxony, Wurtemberg, and Bavaria, were defeated in the battle of Koenigraez in Bohemia, by Prussia, shoals of German bakers and pastrycooks went to Austria and especially to Vienna, following the traditional custom of their craft Guilds to gather experience in foreign countries. Until this very day about a dozen dynasties of German bakers and confectioners still exist in Vienna. Veritable patricians, they are proud owners of establishments whose names and high reputation are known all over Central Europe.

After the debacle at Sadowa the traditional invasion of our German colleagues ceased and Bohemian bakers and pastrycooks arrived in ever-increasing numbers to Vienna bringing their quick and simple emergency off-hand dough-mixing method with them. The Viennese bakers called it after its Czechish originators—the "Bohemian" dough.

Mixing of Doughs

A Vienna or French dough must be mixed thoroughly and well kneaded. The most suitable dough-mixing machine is the open pan type. Twelve to 15 min. it takes to mix a large-sized Vienna bread dough. Smaller, for instance, 3 gall. (42-45 lb. flour) doughs take only 7 min. to mix.

Particularly in straight doughs, it is advisable to bring into close contact the broken-up yeast with the malt extract and sufficient cold water, but not longer than for 10 min. before adding to the doughing liquid. Salt, sugar, eggs, milk, water, and the yeast-malt liquor are put in the trough, bowl, or dough-mixing machine. I strongly recommend to pour that part of liquor in which the yeast has been dissolved through a strainer, which can quite conveniently be clamped on the sides of any dough or trough. You will be surprised at the amount of impurities and foreign matter that are kept out of the dough by this simple device.

With the exception of fat and flour and salt, stir all ingredients well and begin to mix the dough. As soon as all flour disappears, a loose doughy mass being formed, add the salt and the softened fats. Clarified butter (in solid state) and hog lard, being soft, do not need any warming. Oil may be added to the doughing liquor right from the start of mixing the dough. In about 8 or 10 min. the machine will have mixed the dough. The dough must have undergone a generous amount of stretching, aeration, packing, and pulling for several minutes otherwise the result will be a catastrophe.

When mixing a dough by hand, the flour prints are made a good distance from one end of the trough and supported if preferred with a pinning board. Measure the doughing liquor into the trough, dissolve sugar and add the dispersed yeast (yeast and malt solution), add the oil (if any), and draw in the flour from the pinning board or print and distribute it equally up to the end of the trough.

Now shake the mass with both hands and keep on shaking and shaking ; never punch at this stage. Walk along the trough to and fro until a loose dough of the desired consistency has been formed. Add the salt and fat, give the dough mass a few turns in small parts or sections and throw the pieces of dough on top of each other, spreading and stretching all the time. During this mixing manipulation, the sides and the bottom of the trough have to be scraped continuously and the scraps evenly distributed over the dough : if necessary a gentle sprinkling of water should be applied to moisten any lumpy scrapings.

Dough pieces, weighing about 15 to 20 lb. are broken off at the one end of the dough with the hands (no knife is used) and spread over the surface of the dough. Thus the dough is worked piece by piece from one end of the trough to the other until the dough is quite smooth. A skilled baker works the dough once to the extreme end of the trough and the dough is finished when he returns to the spot from which he started. Very little, or no, flour should be needed for dusting when finishing the dough.

To use rice cone flour in dough-making is one of the worst crimes the baker can commit. It is the acme of stupidity. Just as an insulating agent for the cob-shaped, water-dough roll on boards or in boxes (what a hideous practice to the Viennese baker) cones may be used ; they might also be used for dusting the peel when setting to prevent sticking. The use of cones in the trough, bowl, machine, or on the table during the manipulation stage is anathema !

It is a quite different thing when dusting very lightly with a coarser granular top-grade flour during the last 2 min. of mixing the dough by hand or machine. This will take off the wet feel and the stickiness of the dough. Such a flour of a coarse granularity—Hungarian and Austrian millers were famous for it—is the very thing for dusting purposes or when punching and folding doughs.

After mixing the dough, it is either left in the trough, pan, or bowl, or put into trolleys to ferment for the predetermined time. Troughs, mixing pans, trolleys should be greased with edible oil or fats.

These dough-containers rest on wheels or castors to run them with ease into any required place to ferment, or to interrupt and retard fermentations : it may be the doughing room, some corner of the bakehouse, out in the yard, into a refrigerator with walk-in

door or into a proofing chamber. It all depends, as we shall see later, what we are going to make, and the facilities we have at disposal.

Hand-made doughs, whether off-hand or sponge doughs before being put away to ferment, have to receive a thorough methodical kneading or braking with both forearms and elbows. Dough pieces of 15 to 20 lb. are folded a few times and braked. This application of "elbow-grease"—to use British bakers' vernacular—is essential: it is, in fact, the correct manner of finishing dough-making.

Only a dough manipulated in the way described can we consider properly mixed and kneaded !

Off-hand or straight doughs have to be knocked back and punched at least two or three times ; this will ensure a healthy dough, full of life and vigour, with the characteristic extensibility and elasticity of a Vienna dough.

As mentioned above, sponges and poliches must be properly cleared, *viz* : well broken up in the doughing liquor, stirred, and amalgamated. The actual mixing and finishing in dough-making is the same as dealt with in the chapter about straight doughs. Sponge doughs, as a rule, are knocked back not more than twice, in some cases only once.

In doughs made with the addition of old dough, the dough pieces of the old dough should be soaked in part of the doughing liquor and well broken down some time before being mixed into the dough.

Should it happen, as it sometimes does in the best conducted bakeries, that a nearly finished dough—or a dough after it is cleared—needs additional water or milk, the use of a few ounces of soya bean flour or emulsified lecithin to promote the easier and better final mixing of the dough I recommend strongly. The addition of extra liquid in such an unfortunate case is one of the worst things a dough maker has to face, because the final result will seldom be satisfactory : dough-mixing time is lengthened and grave injury inflicted on the dough.

Knocking Back

Break or cut off 15 to 20 lb. pieces from the dough ; give them a good braking with the forearms, folding the dough piece after every punching on the table, in the trough, or container. Do not hesitate to kneel down on the floor beside the dough should it be in a trolley or lined basket or box. It is ever so much easier and this important job must be done in the correct manner by anybody who calls himself a baker. During knocking back, a squeaking and whistling sound tells us that things are well with the dough.

To give the dough just a "few turns" in the mixing machine is the general practice, but this should not be suffered in the making of Vienna, French and *de luxe* breads.

All doughs must be covered, preferably with a flannel cloth.

Trading conditions in Great Britain and in Continental countries as far as the sale of Vienna bread and rolls are concerned are responsible for the difference in the quality of the baked goods. Only a small minority of bakeries specialise in the production of Vienna lines, and turn out goods of the highest standard. These exceptions adopted the continental mode of production and possess the suitable ovens and equipment for a continuous production flow, whereas the majority of bakers regard Vienna bread more or less a mere side-line.

In Vienna bakeries of the first-mentioned kind, freshly baked rolls are obtained at any time of the day. In the latter, a Vienna loaf or roll is expected to keep its crispness for 15 hr. or so : such goods cannot be crisp, they possess a hard crust, no wonder they fail so often to bake a loaf or roll which looses this hardness and have to write to *The British Baker* for advice.

For the benefit of these bakers I mention the following procedure to ensure the hardness of the crust of the baked goods.

Sponge two-thirds of the total liquid at a sponge temperature of 72 deg. F. and use for the balance either tap water or cold milk. In this case more yeast than normally has to be used or a longer fermentation time must be allowed.

By the way, and this is important, the temperature of the bakehouse or the doughing room should not be below 75 deg. F., the dough's temperature ranging from 68 to 75 deg. F.

As I pointed out, I prefer a bakehouse temperature of 80 deg. F. and above for Vienna bread-making. It stands to reason that, in a cold bakery or doughing room, the doughing liquor must be warmer than in a warm bakehouse. Once more judgment and experience of the craftsman must come into play in dealing with environmental conditions.

CHAPTER V

REFRIGERATION AND RETARDED OR CONDITIONED DOUGHS

Processing methods of refrigerated doughs, pastes, prepared, full-proofed, and half-baked goods, as numerous as variegated, have been known and practised daily for many years throughout the European and American continents. With great regret I must say that refrigeration as an aid in production is practically unheeded in the bakery industry of Great Britain. In its technical journals sporadic news appears mentioning refrigeration in bakeries abroad (1938).

Dough refrigeration development enables the progressive baker and pastrycook to step up a continuous production flow—sell fresh goods throughout the whole day. Refrigeration is for our industry here in Great Britain a dire necessity ; it is of the greatest importance, linked vitally with prosperity of the present and the future.

Refrigeration will mark a new epoch in modern bakery production methods and provide vast, never-thought-of-sales possibilities.

Forty years ago, I acquainted leading men in our trade with the advantages of the use of crushed ice in yeast—raised doughs and pastes, storing and conditioning these at temperatures of 33 to 38 deg. F. At that time (1909) I already looked back upon a few years of practical and experimental work in four countries. I was quite dogmatic about my findings, borne out by outstanding results. They were that doughs of Vienna bread types and sweet yeast-raised doughs and pastes, made at considerably lower temperatures than was customary in Great Britain, and conditioned in a cool environment, skilfully treated and manipulated, resulted in bakery productions of the highest order. They appealed to the senses of sight, taste, touch and even sound. Colour of crust and crumb, aroma, flavour, mellowness and crispness were all improved.

This appeal to the senses finds its response and reward in the creation of appetite and the desire to eat. Senses appeal creates sales appeal and stimulates consumption. The trend in our industry during the past forty years towards rationalized production methods must not be at the expense of these physiological and psychological facts. The utter negation of them was the chief

cause of the appalling decline of bread consumption in the early thirties of this century.

As far back as 1898 I remember the use of the old-fashioned ice box or chest for the storage and conditioning of sweet, fermented doughs, pastes, and puff paste. When working in Scotland (1911/12) as a journeyman, I used to condition my Continental fancy milk tea bread doughs, brioches, and Vienna bread rolls doughs by exposing them to the open air in the yard, even during the winter months, to the astonishment of my Scottish colleagues, who by the way, are some of the finest craftsmen in the world.

At the Cadby Hall bakeries of J. Lyons & Co. Ltd. in London, I made ice-cold doughs by hand. Subsequently, the rolls were exposed to a current of cold air, summer and winter. At the Buckingham Gate Bakeries of W. Hill & Son Ltd. generous volumes of ice were used to condition our French bread (yard sticks and rolls) and to keep them at low temperatures and retard the fermentation rate. In 1912 I demonstrated to a large gathering of leading master bakers in the bakery of Mr. Harry Bamford, O.B.E., in London, the half-sponge process with my innovation, the use of crushed ice as part of the doughing liquor (put into the ready sponge) asserting them and proving that fat-containing, yeast-raised bakery products made and conditioned in this manner were superior in flavour, taste, volume, and mellowness to the mediocre and insipid productions sold by the majority of bakers at the time.

In Vienna during 1919 and 1920 I interested the analyst of the Hamner Brotwerke, Herr Singer, in the refrigeration of doughs. His managing director ingenieur, Hans Deutsch-Renner, son-in-law of the President of the Austrian Republic, was planning to make all doughs in their central bakery and distribute these among all their affiliated bakeries, in every district of the City, by means of cold-air-conditioned vehicles, to be worked off and baked miles from the central factory.

A few years later (1928) a prominent master baker of Vienna, Herr Laab and his son-in-law, a consulting engineer, took out letters of patent for their method of refrigeration. I visited his bakery with a score of my colleagues to see the plant working. Not only doughs, fully proofed rolls, crescents and kaisers, but also partly baked rolls of this description were stored in the refrigerator with walk-in doors with the object to supply fresh baked goods at any time of the day within 10 min. of the order given. It was a great success and is now in operation all over the Continent and in the Americas.

Such half-baked rolls are quite pale and possess just sufficient skin and body, the gluten skeleton being rigid, to permit handling. They are placed on suitably sized boards or trays and, when cold,

stored in the refrigerator, fitted with walk-in door, wall racks, and/or combined multiple door units. Loaded racks, with angle strips 5 in. apart, are wheeled in and out of the refrigerator. When required, the rolls are set into a steam-filled baking chamber with a Vienna peel ; its dimensions are as follows : Peel head with 6 in. neck : 24 in. by 16 in. and a supple peel handle 1 in. in diameter. The rolls are baked and treated and are as good as if made straight from the dough.

At the Ormeau Bakeries in Belfast, in 1932, I stored doughs of a certain type for three days (72 hr.). The baked products were perfect every day and best on the third.

During the whole week at the annual exhibition, Agricultural Hall (1933) in the all-gas exhibition of Ellerstyle Engineering Co. Ltd., I gave demonstrations with refrigerated doughs to thousands of visitors for the first time in Great Britain.

The following year I demonstrated and lectured to an assembly of two hundred delegates of the largest refrigerating organisation of Europe and the U.S.A. from every part of the globe, the advantages and sales possibilities of refrigeration in the baking industry of Great Britain : the production and ceaseless supply of fresh baked products. Bakers have to combat effectively the decline of consumption and the appeal of home baking by introducing the refrigerator for production and conditioning in the bakery, in the store room and in the shop and the attractive refrigerated display case.

Advantages of Refrigeration

1. Sweet, yeast-fermented doughs and pastes may be kept for days in the refrigerator.
2. Semi-manipulated goods can be stored, conditioned, and finished when required.
3. Finished fully proofed goods stored and conditioned overnight or any length of time, can be baked immediately they are required.
4. Partly baked goods, such as Vienna breakfast, luncheon, or dinner rolls can be conditioned and stored and baked when required.
5. Bakers' and pastrycooks' raw materials, as cream, milk, eggs, fats, butter, fruit, custard, meats, can be stored and conditioned thus preventing waste and losses.
6. Genoese sheet, gateaux, eclairs, pies, and suchlike can be conditioned and stored.

It is important to prevent crust formation on the surface and sides of the paste pieces usually 4, 6, 8 or 10 lb. It is necessary, therefore, to obtain quick cold penetration, thus easen the giving off of carbon dioxide gas, and retarding fermentation and ageing.

This applies to the finished shapes on the baking sheets or on cloth-covered boards. In bygone days we wrapped the dough or paste sheets in greased paper and damp cloths. Now not only the correct and desired temperature in all parts and sections can be controlled, but the correct relative humidity to prevent surface drying can also be maintained. Correct temperature aids quick cold penetration and by forced air circulation, installed in refrigerators, we assure uniformity of temperature and maintenance of relative humidity at high level.

Since the introduction of plastic materials I have used, with satisfaction, plastic sheets for enveloping or wrapping 4 to 10 lb. pieces of Danish paste. No skimming takes place. A very pleasant dough or paste surface even after two or eight days storage is the main feature. Pinning out with power-driven pastry roller gave first-rate results. After a week I found the paste pieces surface absolutely free of crusts.

CHAPTER VI

DOUGH-MIXING MACHINES

The best mixing machine for Vienna doughs and all kinds of Continental fermented specialities, fancy breads, and rye bread of variable consistencies, is the open pan type with one mixing arm, imitating the action of the human arm in pulling and stretching the dough after moving over the bottom of the bowl from its centre towards the pan's or bowl's front side.

Such a mixing machine's friction with 25 to 30 revolutions per minute is not too high. It is very desirable for large-scale production to instal and use sponge stirrers with a higher speed because the gluten of the flour develops better and the sponge ripens in a less time.

For sponges, the vertical sponge stirrer, as customary in Scotland, is indeed a boon. In an astonishing short time smooth batter sponges can be made so much better and speedier than by hand not mentioning the saving labour and fatigue. Incidentally, the above remarks apply to the ordinary bread production. It is my opinion that the off-hand or straight dough-making process has had its days. Inescapably, in the future sponge doughs will become popular, as they are the cheapest and most efficient way to make better bread.

I am not at all satisfied with the performance of the "churning" type dough mixer with rigid stationary blade. Mixing and particularly the drawing in of the flour is not what the craftsman desires. The dough-maker has no opportunity to gauge or test the consistency of the dough in time before it is cleared, even when stopping the machine. In the case of unknown water-absorption capacity of a new flour, or, if by some error, insufficient liquid was used, the addition of more in an advanced stage of dough-making is disastrous.

A quite different but very efficient dough-mixing machine is the open pan type with two prong-like curved blades. Cutting out or removing the dough in pieces from the pan is easy, simple, and without physical strain or effort. I made many a dough with this type of machine in Vienna during the first years of this century.

As efficient and satisfactory as the prongs open type, is the open pan type with two vertical arms and with prongs at the end of each, in the horizontal. It is deservedly very popular in British, Irish, and American bakeries. Personally, I do like this type of

dough mixer very much, but I never saw one in Austria. To my knowledge, after the first world war only one was in use in Vienna in a so-called War Kitchen. High-speed mixers I never favoured for Vienna bread doughs. Somehow, I have a hunch that they will suffer the same fate as the straight dough process.

Roll Dough Dividers

Almost in every bakery the bun divider is in use. Whether manipulated by hand or power, the semi or full automatic dividers and moulders are indispensable for Vienna roll production.

A master baker of Vienna, Herr Hallfinger, was the originator of the hand dough divider : he also manufactured them in Frankfurt-on-Main. F. Herbst and F. Bruning of Halle a.d. Saale improved on it considerably and developed during the later years the semi-automatic and, later, full automatic divider and moulder for small dough pieces. Every baker has now quite a good choice of British-made machines.

These semi-automatic dividers and moulders will deal with Vienna and French roll doughs of pretty slack consistencies. To put one piece of dough at the required weight on to the metal disc, slip it into the divider, divide and mould and take back to the table, takes the operator 12-14 sec., and the pace is sufficient to keep two men busy to put the round rolls away into boxes or on to boards. A good type of such a machine does not in the least afflict the moulded pieces with mechanical abuse. After recovery, all kinds of rolls can be given their perfect final shapes. They can be hand- or machine-moulded, of the baton shape, rolling-pin treated, etc.

Whether the bun divider be of the hand or semi-automatic type, it has to be cleaned and oiled every day or after every shift by the responsible worker. An uncleaned divider is an unknown thing in an Austrian bakery ; one has the Crafts Guild training to thank for that.

Thermometers, Baths, Floors and Stools

Thermometers, pyrometers and hygrometers are to be found in every well conducted Vienna bakery.

Floors with chess board pattern, pleasant to the eye, and swept three or four times during the day's work contribute to the workers' general comfort. Whenever possible, stools of the proper height are at hand when the operatives are shaping kaiser and crescent rolls. There is also a showerbath in every Austrian bakery which is greatly appreciated by the bakers—and used !

Dimension of Peels and Utensils in the Vienna Bakery

Boards for proofing rolls and loaves :

Length : 6-7 ft.

Width : $14\frac{1}{2}$ in.

Thick : $\frac{1}{2}$ to $\frac{3}{4}$ in.

Trestles: 3 ft. 2 in. high

Table for washing rolls (near oven) :

Height : 3 ft. 7 in.

Table : 2 ft. 18 in. by 2 ft. 6 in.

Vienna Peel : Head : 22 in. by $14\frac{1}{2}$ in.

Peel handle : Length : from oven's mouth centre to back corner of baking chamber plus 14 in. Diameter : 1 in.

German Slip Peel : (Schlag Schieber)

Length : $3\frac{1}{2}$ in. for rolls, 4 to $4\frac{1}{2}$ in. for loaves, bloomers, etc.

Setting board : 16 in. long and 5 in. wide. $\frac{1}{5}$ in. thick and made made from plywood.

Troughs

It is immaterial what kind of trough, wooden or metal, is used, but without question a wooden trough should be zinc-lined. Preference must go in favour of the metal trough with its cornerless bottom. The sponging, dough-mixing and knocking-back procedures are so much more easily performed, and more economically. From a hygienic point of view, the metal trough is also superior to its wooden counterpart. On castors they can be conveniently and without any physical effort worth speaking of, moved about, or run into a proofer or refrigerator, if and when necessary. Metal troughs and dough containers respond readily to temperatures. It is just another ludicrous superstition among many bakers that doughs, sponges, or ferments get chilled or retarded in their fermentative activity.

At the National Austrian Exhibition in London (1906) only metal troughs were used and at the Austrian Exhibition in 1934 the young foreman of the Vienna baker team, W. Bruckmann, saw for the first time in his life wooden troughs in the bakery where they produced the rolls for the Exhibition.

Proofer

Wooden and metal portable proofers should be on castors so that they can be moved about and sometimes they should be fitted with a heating device and, if required, a humidity-creating device for finger, bridge, and certain milk rolls, crescents, etc.

In another place I described at length the means employed

for dry proofing Vienna rolls of every description, brioches, French bread etc., as is customary in well equipped Vienna bakeries. Proofing crescents, especially machine moulded, into a too hot steam-filled proofer will cause them to crack on the surface and they will present a very sad spectacle when they come from the oven. On the other hand, too warm and dry proofing will produce blind crescents.

Rolls, as mentioned, proofed in dry and gentle warmth, retarded for twelve hours or so in a refrigerator, have to be reconditioned before baking. That is, they have to be brought into a temperature of about 85 deg. F. for 20 min. and washed with cold water, Vienna wash, or eggs, and finished off with toppings of carraway seed and salt, nib sugar, nib almonds, streussel, boiled custard, and suchlike, then baked in the customary way.

A refrigerator commensurate with the volume of production of Vienna rolls and fermented small goods and pastries with a minimum fat content of 8 to 16 lb. per sack of flour (280 lb.) will be indispensable in the years to come. The use of a refrigerator of reliable make is not only a business getter but one of the strongest defence measures of the craftsman baker and pastrycook to meet the fiercest competition and the change over to day work.

Sieves

Hand or power sieves must have a place in every Vienna bakery and must be used ! Unsieved flour for Vienna bread-making, and for that matter, for all bread production is one of the unforgivable sins against good workmanship. Yet it happens very frequently in many bakeries to-day.

Hand sieves must be in good condition ; that is without breaks or clotted with fat or old dough crusts. Mechanical sifters should be free from cobwebs and old clotted floury crusts. Daily cleaning is absolutely necessary. This goes for flour blenders, elevators, and all flour containers, large or small. Sieved flours always give better results. One can tell at once a baker from the manner he sieves flour and handles the hand sieve. Of course, this has to be learned by practice. Therefore, be it understood, that wherever I mention flour, take it that it is sieved.

Brushes

Bread (long handled) or egg wash brushes must be suitable for the purpose intended and never be allowed to remain in the liquid, not even during the day's (or night's) work.* Put the brush across the receptacle containing the water, wash, or eggs as the case may be.

Table and flour brushes must be in good condition and not embellished with hard pieces of dough and should make a noise like

a busy hedgehog chasing black beetles. Hedgehogs are reliable destroyers of beetles, cockroaches, etc., by the way.

Knives

There is no such thing as a Vienna Knife used in Vienna's or Austria's bakeries. For the cutting of the only roll, the common water roll is the cob or giving it its genuine name Schuster Laiberl—Cobbler's Roll—the old-fashioned razor of the "cut-throat" kind is used. French and Belgian bakers use a thin, supple, $\frac{1}{4}$ in. wide steel blade, sharpened every day on an oil stone. Such a steel blade, 5 in. long, should easily bend, and respond to the operator's touch.

Razor blades are unknown and so are the rigid and clumsy knives so indispensable to the cobbler or shoemaker.

Scrapers

For the metal trough, supple steel scrapers resembling the Scotch scraper are used. Good strong celluloid or plastic scrapers are very suitable.

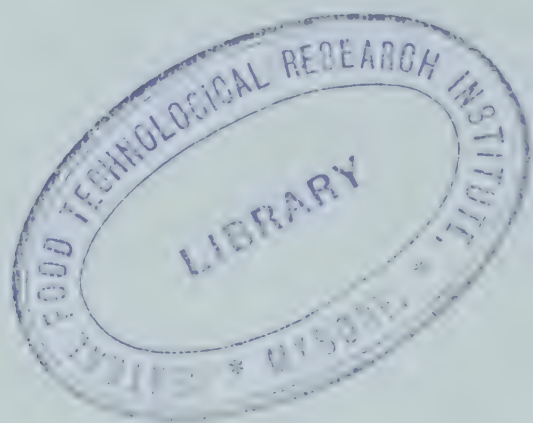
To scrape the table the "Jucker" is the best tool I know. It consists of a 3 to 4 in. long piece of a peel or broom handle, sawn half way in the middle into which an ordinary blade of a table knife is inserted or wedged. One can grip it well and apply the knife's edge to the wooden table most efficiently without damaging its surface. Washing of the table is superfluous.

Rusks Grinding Mill

Each baker in Austria possesses a machine or mill for grinding the stale and dried Vienna rolls into fine rusks for which he has a ready market. He can dispose of any quantity to his customers because for many luscious sweet dishes, fish and chicken, veal, pork cutlets frying, etc., large quantities of Vienna bread rusks are an indispensable raw material in every household, hotel, and restaurant.

From rolls dressed with salt, carraway, or poppy seeds the crust with the seeds, etc. is carefully cut off before drying.

Waste of stales or cripples is reduced to a minimum.



CHAPTER VII

WORK AT THE TABLE

Weighing or Scaling Off

Small rolls are scaled off in bulk, so-called "heads," "weighs," or "presses," then layed up for some time to recover and cut with the bun divider into 30 or 36 equal pieces. In continental countries, where the decimal system is in vogue, roll dividers have 25 or 50 divisions.

Every "head" must be properly moulded or "rounded up" and layed up, if necessary covered with a cloth to prevent skinning and of course to aid recovery. It depends entirely on the number of operatives available and the rolls required how many heads have to be scaled off before moulding and shaping of the rolls begins. I hold the view that it is beneficial for the final product to let the "heads" have a good rest. That means that the scaling off starts when the dough is on the "young" or "green" side.

Not too often I have found bakers utilising the bun divider to simplify the scaling off of 4 to 12 oz. dough pieces. For example, say three dozen rolls at 12 oz. each are on order. Instead of cutting and weighing thirty-six pieces at $6\frac{3}{4}$ lb. each, the bun divider will cut thirty-six equal pieces weighing 3 oz. With each hand we take four pieces and mould them into two, round, cob shapes. Thus we save time and superfluous manipulations. Instead of repeating thirty-six times the cutting and weighing, we cut only four pieces of dough and divide them.

This practice is applied, very advantageously, in the making of plaits and chollas, so much in favour with our Continental and Jewish customers.

The combined semi-automatic divider and moulder of the old-fashioned, bun-divider type with interchangeable discs, the combined divider and "umbrella" moulder, and the automatic combined divider and moulder for rapid production with gyratory moulding action, are doing away with hand-moulding and make an incredible output possible. In Vienna these labour saving machines are appropriately nicknamed "Iron Journeymen."

The machines just mentioned and a few others are the robots in the bakehouse, partly from the outcome of rationalising pro-

uction methods and partly from the counterpoise to the effects of the abolition of night work in the countries concerned.

Moulding Small Rolls

Mould all the small rolls round, similar to moulding buns. Even in this primary manipulation, very often poor craftsmanship is shown. The tips of the fingers of both hands should meet the heel of the hands during moulding. The dough piece is moulded with a circular movement of the hands away from the body. The surface of the dough piece must be perfectly smooth, the skin unbroken, and the close or end of it as small as possible (bird's eye).

Naturally, the finger nails suffer, but the roll is correctly and firmly moulded. Moulding with the root of the thumb and the palm of the hand with outstretched fingers is absolutely wrong. Tutors and teachers of technical schools ought to be very severe on this point ; foremen and charge hands likewise.

Now we have to consider what kind of rolls we are going to make. Every shape, including the simple cob, should be moulded twice. After they have been moulded for the first time they should be thrown at random towards the back of the flour-dusted table. After moulding about four or five dozen rolls, dust them with flour, shuffle them thoroughly and shove them neatly together in one group.

Once again, the number of men determines the whole operation. For the ordinary plain cob, just mould the recovered rolls again, putting them with the close up on to cloth-covered boards. The dimensions of these boards are usually as follows : $14\frac{1}{2}$ in. wide, 7 ft. long, $\frac{3}{4}$ in. thick. The boards rest on folding wooden trestles or iron ones to be adjusted as required.

Many bakers here in England use wooden boxes for proofing, putting them on top of each other to prevent the formation of skin. Personally I prefer boards with cloths because work is easier, more rolls—large or small—can be put in the same space, and bolder rolls will be baked from upside-down proofing.

In a bakehouse with a humidity of 80 to 85 deg. and a temperature of 80 to 90 deg. F. and above, quite common in the Vienna or French bakehouse, the cob-shaped rolls from a very slack dough may be placed on boards liberally dusted with a mixture of flour and semolina or rice cones. To prevent skinning, thin clean cloths should be used for covering. Rolls proofing in boxes will have a moist surface and are set after cutting the top surface with a sharp steel blade. In the chapter about "Work at the oven, preparing and finishing off before setting" the cutting of the rolls and other related manipulations will be described in detail.

Reshuffling the Rolls

Reshuffling is not only necessary but another "landmark" or proof of genuine craftsmanship ! The moulded, small, bun-like dough pieces are not allowed to stick to each other during the time of recovering, and sometimes proof at a quite rapid pace (bakehouse temperature 80 to 90 deg. F.) they must be moved and turned about—"shuffled"—to expose them from every side to the temperature of the room.

Imagine three parts of the table being occupied by small round dough pieces approximately 1 to 2 oz. in weight. Small lots of eighty to one hundred pieces are dealt with as follows: A small quantity of flour, about 2 oz. is thrown over every group of rolls. The flour must be thrown with a sweeping movement of the hand into the air about 1 ft. above the rolls, so as to descend like a cloud of dust on them. Now every roll is separated from its neighbour by using the thumb, index, and middle fingers of both hands simultaneously. Move the pieces gently to and fro, making a circular movement with the palms and outstretched fingers of both hands, avoiding any undue pressure, and keeping the shapes as perfectly round as possible.

The scaling off, moulding of the heads or presses, the dividing by hand or automatic bun divider, the moulding into round ball, bun or cookie-like shape is done by several men at the beginning, until the dough pieces have sufficient proof.

I hardly need to mention that I do not intend to describe "rush" methods, which the trained craftsman detests instinctively. They are slovenly practices, and the result in every case is 50 per cent. below standard.

As soon as the dough pieces are ready for further manipulation, the most skilled and the quickest workers begin their task, making the shapes. The apprentices or junior journeymen continue with the scaling off, dividing, and moulding the basic shapes, put them in the lots or groups of a hundred or so towards the right hand end of the table as described, where the senior journeymen are busy making the manifold shapes. Any volume of rolls and variety of doughs is dealt with in proper, most efficient, and quickest manner. With comparatively few exceptions during my forty years visits as demonstrator and adviser in every part of Great Britain and Ireland, did I come across Vienna bakeries or departments where work is carried on in a professional and rational manner. The great majority of the so-called "Vienna or French" bakers I found were incompetent in their methods, workmanship, and workshop management ; the result of the lack of thorough training or apprenticeship.

Let us return to the work at the table. As the bakehouse

temperature in Great Britain is usually below 80 deg. F., it is absolutely necessary to cover the basic shapes, whilst resting on the table, with a clean but light cloth to prevent skinning and to provide protection against draughts. This is invariably done even in bakeries on the continent with a temperature of 95 deg. F. Once again I have to point my finger warningly at the "all-knowing" yellow-craftsmen, who expect to produce good rolls by discarding essential procedures of work at the table. It is an axiom in Vienna bread-making that each dough piece must be free from every particle of flour ; its surface be in such a condition that the parts of the roll which meet during folding break asunder or split during baking. On the other hand, certain rolls and shapes must have a well sealed close.

The skilful and sensitive fingers and hands of the baker, the treatment and conditioning he gives his rolls determine the ultimate shape when baked—not luck !

How often did I hear the unfortunate but significant slogan, which I deliberately mentioned at lectures and demonstrations, namely, "We are good bakers, but we must have luck."

In this chapter about table work I mentioned cones. For the Vienna baker such a thing as cones do not exist, except as an insulating agent on the board and on the peel when setting. In many continental countries a fine meal from beech wood is specially produced for bakers to dust the peel for setting. Nothing adheres to the loaves or rolls, because the Vienna baker invariably brushes even the bottom parts of his loaves and rolls.

Handing Up Larger Pieces

Dough pieces weighing from about 8 oz. to 1½ to 2 lb. must be carefully and well moulded and layed upon the table, allowing sufficient space for expansion. They should be slightly dusted (as described above) with flour but not with cones.

These round dough pieces are placed methodically in rows with the close or end up ; when using boxes, place with the close down. A smooth surface is needed to mould good French or Vienna loaves of the many shapes and types.

Preparation for Work at Table

Before work at the table starts, boards and boxes must be ready in their appointed place. The long boards should have been covered with clean cloths and piled on top of each other the day previously. A pile of eight to twelve rests on the two trestles parallel to the table, leaving sufficient room for the operators to move along and turn. A large basket (round or rectangular) or wooden box on the floor underneath the boards and between the

trestles should contain the neatly folded, clean cloths when they are not in use.

Iron wall racks in and outside the bakehouse and proofing-conditioning room for the boards and baking sheets in sufficient number are desirable, if not indispensable, and very practical.

And so—not less important—are one or several pairs of steel bars or pipes about $4\frac{1}{2}$ in. in diameter, parallel to each other, either suspended from the ceiling or fixed against the opposite walls 7 ft. from the ground for proofing rolls, and loaves on boards or on baking sheets. Thus we proof above our heads in the warm atmosphere, utilising the otherwise wasted space of the bakehouse. After a forty-four years acquaintance with bakeries in Great Britain and Ireland, I am still puzzled why British bakers do not adopt this cheap and practical, space-saving proofing method found all over the continent.

Rows of clean boxes, near at hand, may be in a corner of the bakehouse or above our heads resting on two wooden or steel bars running parallel to each other right across the room from one wall to the opposite. Before 1915, the year of abolition of night work in Austria, proofers with steaming arrangements were unknown.

It is not in the province of the Vienna bread baker to clear the proofer of fondant pans, jam pots, frozen egg tins, boxes containing remnants of puff paste, margarine, or fats. A united front between bakers and pastrycooks when fighting the daily and nightly battle of production should be established. This is a task for the proprietor, manager, or the responsible foreman. Order and discipline, goodwill and understanding among and between the day and night staffs is an essential part of a commonsense workshop management. It makes work so much more pleasant and gives satisfaction to everybody concerned—master, manager, and men.

We also need in the Vienna bread bakery a humid atmosphere. A humidity of 85 deg. suits our purpose best. In Vienna, where the atmosphere is so much drier than in Great Britain, very efficient and inexpensive humidifying apparatus is used in bakeries. The up-to-date, progressive and thinking craftsman not only conditions his flour and raw materials but also his sponges, doughs, loaves, and rolls from the trough to the oven and makes sure of a reasonable "Shop Life" of his baked products until they reach undamaged the table of his customers. The working off, treatment, and manipulation of the many kinds of rolls and loaves, I shall describe and explain in every case.

Whether two journeymen are working on the Viennas or twenty, in an up-to-date Vienna bakery or department, the above outline holds good; adaption may be necessary. A good baker must think ahead and plan his daily work or shifts and not con-

continually curse the day when he made his fateful choice to become a baker.

To the newcomer, the uninitiated, and even the well-trained bread baker not excepted, the continental fashion of working at the table seems to be complicated. Certain men are put to special jobs, their output converging into an even flow controlled and supervised by the foreman in final proof who directs the rolls and loaves to a humid, dry or droughty atmosphere conditioning as the class of product demands. The finally treated rolls go to the oven, where specially trained oven journeymen work for hours without the oven chambers being empty once.

The stages in Vienna bread-making are : (1) Setting the sponge ; (2) Adding the balance of the doughing liquid ; (3) Clearing the sponge ; (4) Mixing the dough ; (5) Knocking back ; (6) Table work ; (7) Proofing and conditioning of doughs and manipulated rolls ; (8) Final treatment of rolls and loaves, etc. ; (9) Baking ; (10) Conditioning of baked products.

Work Rhythm

As an apprentice and journeyman I spent fully over a thousand nights between bench and boards, on the trough and oven, either putting rolls on boards made by four or six swiftly working journeymen or sitting comfortably on a stool for hours shaping crescents, shuttle-shapes or kaiser rolls. During these long, seemingly never-ending nights I discovered a wonderful, nay, a miraculous cure for toil and tears—rhythm !

Every movement of my hands, feet, and body when working, every step I studied with ever-increasing interest and brought them into a harmonious well-thought out system. I derived physical pleasure by working ! And by these means I increased my speed, perfected my skill, eased my physical efforts and lessened fatigue.

I applied my experience to other manipulations as, for instance, the beating or whisking of whites of eggs or a sponge batter (yolks and sugar) by hand (other fellow workers did this without giving much thought to it), changing the whisk from the right hand to the left and so—always beating in rhythm. When making a certain popular shuttle-shaped roll, if it is done rhythmically an incredible speed can be achieved.

At J. Lyons & Co. Ltd., Cadby Hall, Vienna bakeries during two years (1906 to 1908) I was known as the fastest kaiser-roll shaper (Wirker) amongst the forty-two Vienna bakers, this was achieved by motion study on my own body and close observation of my fellow-workers' habits during their manipulations. Still to-day, forty years after, it pleases me, when I have the opportunity to show something of the art of Vienna bread-making or baking,

to apply rhythm. I make the subject of a short sort of lecture to the young adept of the craft how rhythm assists in developing speed without increased physical effort, bringing pleasure into otherwise monotonous actions repeated a thousand times during a night or a day.

In 1910 I read for the first time Frederic Windsor Taylor's "Scientific Work Shop Management." It roused my interest in time studies and the technical training and tuition in Great Britain's bakery schools. I realised only too well the herculean task of a baker who has to train himself as best as he can, instead of having methodical teaching and training. Surely every chargehand, foreman, or manager knows how difficult it is, what determination and effort it needs to change or erase a newcomer's acquired bad habits and set him to perform a new task or to do an old one in a new way.

Putting it psychologically : Habit acts in a powerful way to affect the speed and the sequence of motions which a worker uses in performing a task. Once the habit is formed, effort is required to change or modify it.

In this critical epoch of Great Britain's national economy we need the utmost and efficacious utilisation of intensive human efforts in all branches of industry for the benefit of the community. To quote Frederic W. Taylor words so very true and fitting to-day's situation : "Scientific Management requires a complete mental revaluation on the part of the workman—and on the part of those on management's side. Both sides must recognise as essential the substitution of exact scientific investigation and knowledge for the individual judgment of opinion."

Bakery Conditions

Bakers in Vienna and Austria store their flours in cooler places than here in Great Britain. Every pound of flour must be sieved, by hand or power. As long as I can remember, doughs have been conditioned in cool places, outdoors, or with ice. This applies to shaped and proofed rolls on boards. Bakers of repute condition yeast and malt extract in a part of the sponging liquor for 10 min. or less. The milk, or water, is cold, even in winter. Baked rolls and bread are not exposed to sudden temperature changes. Partially baked rolls, just sufficiently baked to permit handling, are cooled, then placed into the refrigerator and finished baking whenever required. This latter procedure I witnessed in 1928 in Vienna.

The Vienna and Austrian baker makes a variety of seven to fifteen white-flour doughs every four hours. The British baker may successfully adapt Vienna condition methods to the making of his crusty bread types, as, for instance, coburgs, cobs, and cottages.

Excellent results are obtained by using two-thirds of the yeast in the sponge and one-third when mixing the dough. For the sponge, use one-eighth to one-sixth of the total liquor.

In the sponge, use two-thirds of yeast quantity, 2 oz. of raw sugar (milk powder if any), and 12 lb. of flour to the gallon of liquid. Sponge temperature 77 deg. F., dough temperature 68 to 72 deg. F. Let the sponge lie for 15 to 20 min.

Crusty, hearth-baked breads, if popularised, will stem the tide of decreasing bread consumption. The texture of Vienna rolls is rather close and not as open as commonly accepted by the British baking trade. With French bread and rolls it is different.

As already pointed out, Vienna rolls are thoroughly baked and at a much lower temperature than is customary with British bread types. Plaits made from Vienna bread, milk and fancy milk bread doughs, brioches, potato milk bread doughs, possess a distinct beautiful, longitudinal, cellular structure, owing to the proper moulding of the dough strands and the rope-like twisting of them.

I expounded this fact in 1912 at demonstrations, lectures, and articles : *Texture is mainly a matter of mechanics!*

The Vienna Bakehouse

There are *Seven fundamental features of the Vienna bakehouse*, namely :

1. Lower bakehouse ceiling
2. Lower flour store temperature
3. Lower dough temperatures
4. Lower final proof temperature (also retarding in cold current of air, ice box and refrigerator)
5. Lower baking temperature
6. Lower crown of baking chamber
7. Higher bakehouse (doughing and manipulating room) temperature.

In a Vienna bakery proper, the mixing, fermentation, and manipulating of doughs, shaping and proofing of rolls and loaves is, so to speak, a department for itself. So is the conditioning, finishing, and baking of the numerous variety of goods. In typical Bavarian, German, and Swiss bakeries all these operations generally take place in one big room.

The oven or ovens are built in such a way that their back or sides adjoin the bakehouse. Another characteristic feature of the Vienna bakehouse is its low ceiling and, as a consequence, the higher bakehouse temperature, namely, 80 to 90 deg. F. To maintain this temperature during the winter a stove with continually boiling water is kept going. The space overhead, about 7 ft. above the floor, is utilised for proofing and so the walls are fitted with

wall racks. The adjoining room where baking takes place are also fitted with wall racks. Wherever possible, for instance, outside in the yard, wall racks will be found, well protected from rain or snow. Heated proofers and proofing chambers came into vogue as late as the early 'twenties. Before that time they were not known in the Austro-Hungarian monarchy.

Good light and ample sitting arrangements (stools) is a matter of course. The shaping or moulding of emperor's (kaiser) rolls, batons, crescents, plaits and suchlike can be performed at an incredible speed and exactitude with minimum fatigue than if carried out in a standing position. The foreman's seat is at the head of the table wherefrom he has a commanding view over all his workers and can control at a glance every phase of the production flow in his sphere. The work outside at the ovens is the oven foreman's (Helfer) responsibility. In the majority of cases the young-journeyman baker chooses to become either a fermentation foreman or an oven foreman and seldom deviates from this decision.

Both provinces exact great skill, experience, judgment and responsibility, incomparable to the activities of the baker of English or French household bread. These men are artists, genuine craftsmen with great pride, an unbelievable sense of responsibility and are strict disciplinarians. I learned to appreciate their mastery of the craft.

It was an old custom of the Guild, which I practised with the greatest pleasure, that a foreman, when, out of work, visited his former apprentices, whether journeyman, foreman or master, to collect every week a silver florin and be treated to a meal and a pint of beer or wine, a few cigarettes, or a cigar.

The walls of the bakery are generally tiled and dry. In a well-conducted Vienna bakehouse no glass bottles and scented soap are suffered. The sink is kept scrupulously clean and sufficient scrubbing brushes and towels are provided. Every man also gets a towel for which he is responsible. In 1919 a law was passed that every bakery, no matter how small, must have a shower bath, and these are used and appreciated. A suitable size gas cooker for defrosting milk in churns can be found in all places.

During the late 'twenties an electrically heated air-humidifying apparatus was introduced in Vienna and Austria's bakehouses. Why cannot we have similar, British made, inexpensive humidifying devices for the family baker ?

CHAPTER VIII

THE KAISER OR EMPEROR'S ROLL (SEMMELE)

The visitor to Vienna, or any Austrian city or health resort, will enjoy fresh newly baked rolls at every meal. Three to four times each day, Vienna baker craftsmen repeat the production of of their seven to fifteen varieties of rolls from as many different doughs every day. Each production period comprises normally four hours or so, and is called a "tour."

The making and baking of kaiser rolls are left for the very back end of a "tour," because the dough contains malt, milk, and sugar, but no fat and the oven is then in the most favourable condition for this type of roll.

No matter the season of the year, outside and bakehouse (doughroom) temperatures have to be taken into careful consideration in adapting the suitable fermentation method, sponging proportion and suchlike, described in the chapter on sponge doughs.

One cannot give hard-and-fast rules as to whether which sponging or straight dough (bulk fermentation time) should be used or the temperature to adopt. Those decisions have to be left to the experienced and skilled, discerning craftsman.

For kaiser rolls scale off the dough into 3½ to 4 lb. pieces, mould them firmly round, and lay them up either on the table (covered with cloth) or in drawers for 10 to 15 min. A second handing up is by no means detrimental to the final result ; always consider the condition of the dough in bulk.

Divide the heads or presses in the bun divider or put them through a semi-automatic moulder. If the hand bun divider is used, each piece of dough must be well moulded by hand, and shuffled, and so forth, as described in the chapter "Work at the Table."

Machine-moulded pieces are treated in the same manner. The recovered, round, dough pieces, before shaping into kaiser rolls, will have to be separated by one man rapidly, giving them a slight dusting with flour and a gentle shuffling. He will arrange the dough pieces close to each other, and thus keeping the skilled journeyman who is shaping well supplied by placing the pieces in front of him.

In Vienna bakeries many hours are spent making kaiser rolls. The shaper takes the dough piece with his left hand, slips it into

his right, then he wipes it from a small heap of flour in front of him, patting it flat at the same time and shapes it with both hands into a rosette, consisting of five equal parts.

Shaping the Roll

The operator pats the round dough piece flat by holding it with the thumb of the right hand underneath and making with the finger tips one part of the round flat piece rather thin, sufficient for the thumb of the left hand to be layed on. The thumb remains all the time in the same position until the shaping manipulation of the rosette is finished. The left thumb lies flat on the dough piece covering half the diameter and pointing towards the centre. With the left index, middle and ring finger a fifth of the dough piece is lifted up, folded over the thumb and firmly bashed with the side of right hand close to the thumb. At the same time the left hand makes an anticlockwise movement, the thumb and left hand remaining still, whilst the left index, middle and ring finger repeat the lifting and folding action four times.

Finally, the left thumb is withdrawn and the last part—the fifth of the dough piece—inserted into its place. Two parts of the roll, the first and fifth, are sealed with the knuckle of the first joint of the right index finger and the point of the right thumb by “nipping” the two ends firmly together. The patting of the dough pieces and folding are done in rhythm and with incredible speed for hours by the skilled craftsman comfortably seated on a stool.

He disposes of the moulded rosettes or kaiser rolls to his right. Dealing with thousands of rolls, men work in pairs together, placing the rolls in groups. One apprentice or junior journeyman has his work cut out to take two rolls in each hand to put them in rows of four—star pattern towards the board—on cloth-covered boards resting on telescope steel trestles behind the seated journeymen. When a board is full with rolls, the assistant pats the rolls well down with both hands. An empty board of similar size is placed on top of the rolls and the apprentice sits a few seconds on the board, to press them down equally. The board is removed and the rolls put across the overhead proofing bars and, when required, taken into another room, or placed into wall racks or outside the bakery for conditioning purposes.

To get bold, well-shaped baked kaiser rolls with small round bottoms, it is essential to expose them for a short time to a current or draught of cold air.

Should the moulded dough pieces, when separated for immediate final shaping, show signs of sticking, they must be taken to the oven underproofed, because the dough is too young (green). The best test for correct proof and correct bulk dough fermentation

is the gentle separation of one or two sectors of the rosettes with both thumbs. With correctly proofed kaiser rolls, the sectors can easily be separated: should the sectors stick together the dough is too young; on the other hand if the sectors part too easily, the dough is too old. The practical craftsman will know what to do to avoid the one or the other.

This conditioning of shaped rolls or loaves is a centuries-old practice in all parts of the former Austro-Hungarian Empire. I am proud to say that it has opened a new avenue of development with the chilling of doughs and the substitution of a proportion of the total doughing liquid by ice. There is still a wide field of unexplored possibilities of retarded doughs. For instance, from a mixing plant the distribution of doughs can be carried out in refrigerated vans over a large area, and manipulated and baked in localities according to taste.

Machine-moulded Kaiser Rolls

Shortly after the first world war, a firm of bakery engineers in Vienna manufactured a hand-operated shaping machine and the rolls were of first-class appearance, texture, and volume. This machine was sold here in Great Britain and found its use in some of the famous bakeries in the land.

Treatment and proofing, conditioning and baking the same as with the handmade article.

Baking of Kaiser Rolls (Semmeln)

It is an old custom and a rule borne out by experience that to bake kaiser rolls and rolls made from kaiser roll dough, the oven is in the most suitable condition after other kinds of rolls have been disposed. In Austria, the broad-headed peel is used for setting; the slip peel is unknown except in the western province Vorarlberg bordering on Switzerland and Bavaria. The setting is done as outlined in the chapter on the original Vienna oven.

To work with speed one has to use at least two, preferably three, slip peels. One man sets, another helps to bring forward the boards or boxes and fill the slip peels, while the oven man opens and shuts the oven door, and so forth.

The craftsman baker never uses two slip peels or a rake to scoop the kaiser rolls out of the oven. It is simply not done. With a Vienna peel (peel head, 22 in. by 16 in.) he lifts carefully, but speedily, the rolls from the oven sole and slips them on an iron grate fixed near the right or left of the oven mouth. His assistant, using a long-handled bread-wash brush—dipped into Vienna wash or one white of egg whisked with 1 qt. cold water—and shaken well, slightly glazes the surface of the rolls on the grate and drops

the rolls into a basket placed in such a position to prevent injury to the rolls.

The life-time of every Vienna roll is limited to 4 hr. After that they are sold as stale rolls, much-looked-for by the Austrian housewife to make dumplings, sweets, and suchlike. Unsold kaiser and other rolls are dried and ground to rusks with a rusk grinder and these rusks have a place in every housewife's kitchen. Waste of bread is practically unknown.

Refrigerated half-baked kaiser rolls eliminate staling, make possible every hour fresh rolls on the counter.

Once more we can observe another application of "Conditioning" in Vienna roll production—changing the surrounding conditions by interrupting the baking process. In the middle 'twenties leading bakers in Vienna who installed the spacious refrigerators effected economy in time and stales by eliminating large-scale production. By making only one dough each day for kaisers and rolls of the same class, instead of three times during twelve hours, with the aid of the refrigerator, they could supply their customers with newly baked rolls at any time of the day and reduce the staling problem to a minimum.

All the required rolls are shaped, proofed as usual, but baked to a certain stage only. When the rolls have expanded to their utmost in the oven and the gluten skeleton has reached its optimum rigidity although the skin of the rolls is still without any sign of colouring, they are quickly and carefully drawn and placed on the long wooden boards. When cooled, they are stored in the refrigerator until required. Finishing baking is simple. Before setting, wash or spray with cold water and bake in the usual way until ready (about seven minutes).

King Edward VIII Vienna Dinner Rolls

(1 gall. 3-hr. Straight Dough)

1 qt. full cream milk	4 oz. malt extract (syrup)
3 qt. water	2 oz. sugar
4 oz. yeast	4 oz. butter

16 lb. flour (variable) (50 per cent. Hungarian) 50 per cent. English top grade)

Dissolve the yeast, malt extract and sugar in 1 qt. of water at 90 deg. F., and the salt in part of the doughing liquor. Begin to mix the dough ; when clear, add the softened butter and mix this into a good but not too stiff kaiser-type dough. Dough temperature, 72 deg. F. (warm bakehouse). Give one knock back, proceed as usual, and bake in steam oven at 400 deg. F.

I made these rolls with the foreman of Messrs. Selfridge's at their Iron Gate Bakery at Paddington for the King's dinner after

attending the British Legion meeting at the Albert Hall on Armistice Day.

The illustrations show the identical roll salt sticks which appealed to the Duke of Windsor, then Prince of Wales, when visiting the Austrian National Exhibition at Dorland Hall, Piccadilly in April 1934.



Salzstangl

Salzgschrade

Salzstangl

He took a fancy for the baton-shaped roll, sprinkled with salt and caraway seeds. It was the well-known Viennese *Salz Stangl* or Salt Stick, made from kaiser dough without fat but full cream milk, rolled up like a crescent, but not bent.

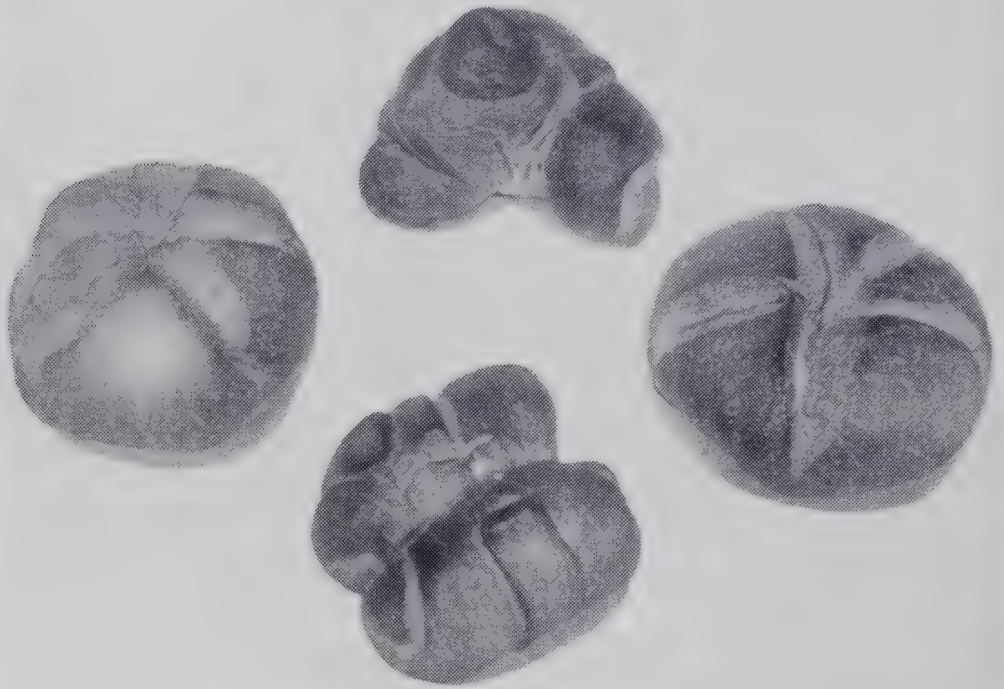
Emperor Francis Joseph had also the same whimsical partiality for it.

Another day their Royal Highnesses the King and Queen, when Duke and Duchess of York were my illustrious guests. Her Majesty was admiring the scenery of a large oil painting, taking up the whole background of our pavilion, depicting the beautiful home of the wine the Royal visitors were enjoying. Her Majesty deigned to engage me in her enchanting manner in a long conversation. Being brought up amongst these hills and vineyards to manhood, I was happy to give her all the historical information, especially the episode of the last surviving inhabitant in the Clocktower of Perchtoldsdorf when the Turks sacked the whole countryside of the south eastern slopes of the Vienna forest in 1683. The glasses out of which the Duke and Duchess drank are precious possessions of mine. Labelled and dated, they occupy an honoured niche among my collection of curios, pictures, and antiques.

Another distinguished visitor whom I was exceedingly pleased

to welcome was the late Mr. J. H. Macadam. He praised our small but exquisite exhibition to show the British public how Austria could usefully participate and contribute towards the development of a peaceful Europe. But to my consternation and everlasting regret, he took no wine and left no glass !

Again, on an unforgettable day, H.M. Queen Mary, with Princess Royal and other Royal Ladies were scanning with interest the array of Viennese rolls and pastries on the stall of "The Bakers from Vienna" next door to my place. A very lively conversation between the Royal Ladies took place. Rolls covered with poppy



Kaiser Semmel

Common Roll

Italian Roll

Kaiser Semmel

seeds, Apfelstrudel, and Sacher Slices were the special objects of their interest. Her Majesty gave us a daily standing order of 80 Vienna rolls, mainly those covered with poppy seed. Princess Beatrice, Marie Louise and Helen Victoria were our regular clients as well.

Verily we lived and still live in history-making times. Our Minister Baron George Frankenstein (now Sir George) said at the opening ceremony : "We want you to realise that we are building up with patriotism, determination and reverence on the foundations of the past, that better future for Austria in which we confidently believe."

Three months later, the Austrian Chancellor, Dr. Dollfuss, was assassinated. Our golden dream of an independent, free and happy Austria was shattered within a short time.

Half Sponge Kaiser Rolls Dough

(3 gall. $2\frac{1}{2}$ hr.)

48 to 52 lb. flour	15 oz. salt
3 gall. milk and water	3 oz. raw sugar
15 oz. yeast	$2\frac{1}{2}$ oz. malt extract
1 oz. mineral improver	

The more milk is used the less sugar.

Where all milk is preferred, sugar is not necessary.

Half Sponge

$1\frac{1}{2}$ gall. of water or milk 90 deg. F.

15 lb. flour

15 oz. yeast

$2\frac{1}{2}$ oz. malt extract or its equivalent of crystallised malt extract.

When the sponge begins to drop—this is noted by the triangular cavity in the centre on the surface of the sponge—pour on to it the remaining $1\frac{1}{2}$ gall. of cold milk. Add the sugar (dissolved in the milk) clear the sponge, add the balance of flour and start mixing. On the cleared dough, dredge the dry and sieved salt, making a firm smooth dough. The mineral salts should be dissolved in a little milk and incorporated when dredging the salt over the dough. Let the dough rise once, knock back, and repeat this after 30 min. Scale off 20 min. later. Proceed as usual.

Austerity Vienna Rolls Dough with National Wheatmeal Flour

($2\frac{1}{2}$ hr.)

45 to 48 lb. national flour	18 oz. yeast
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3 gall. water	15 oz. salt
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15 oz. blend of sweetened fat emulsion, and glucose.

Blend : Cream 1 part of sweetened fat with 3 parts of thick glyceryl monostearate emulsion (5 : 1) and 1 part of glucose, lactose, syrup, etc.

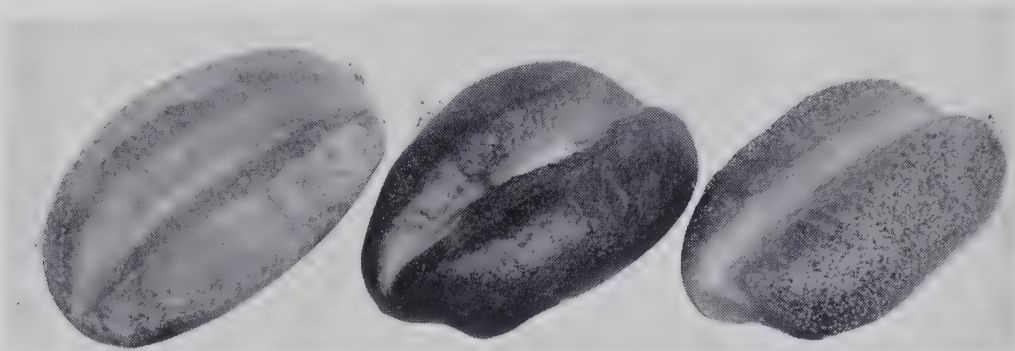
Sponge

1 gall. water 90 deg. F.	5 oz. blend
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12 oz. yeast	10 lb. national flour.
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Make a smooth batter sponge. When the air bubbles burst, pour on the remaining $1\frac{1}{2}$ gall. of water, into which 5 oz. of yeast have been dissolved, at a temperature to obtain a dough temperature of 78 deg. F. Add the remaining 10 oz. blend, clear the sponge, and start to mix the dough with 30 lb. of flour. When clear, dredge

the dry and sieved salt over the dough and make a good smooth dough, which will take 15 min. Knock back after 1 hr., repeat $\frac{1}{2}$ hr., and work off immediately. This dough will make beautiful Vienna sticks, crescents, batons and all fancy shapes of good volume, bloom and lovely crumb.



Vienna Rolls (Kaiser Weckerl)

Sponge Kaiser Roll Dough

(1 gall. 4 hr.)

16 to 17 lb. flour	5 oz. salt
1 gall. of milk or/and water	1 to 2 oz. raw sugar
$4\frac{2}{3}$ oz. yeast	$2\frac{1}{2}$ oz. malt extract

Sponging liquor and sugar-quantity remarks apply as above.

Sponge with 3 pt. milk or water at 76 deg. F. and 5 lb. flour ; let it rise for about 1 hr. but by no means let the sponge drop, which it will not if the sponging liquid temperature is adhered to.

Dough up with cold milk or water. Mix the dough as mentioned previously. Some flours colour more than others and, should the oven be hotter than desired, the sugar should be omitted. Knock back twice and weigh off after the second knock back.

If the sponge should be too ripe, as gauged by the consistency of the sponge breaking up too easily, 1 pt. cold milk or water and $\frac{1}{2}$ oz. salt should be added to the doughing liquor when mixing the dough. The ultimate result will be quite good *viz* : fine rosettes with a nice break and bloom.

Another Method

(1 gall.)

16 to 17 lb. flour (variable)	$4\frac{1}{2}$ oz. salt
1 gall. water or/and milk	$2\frac{1}{2}$ oz. malt extract
4 oz. yeast	1 to 2 oz. raw sugar if necessary

Half Sponge

2 qt. milk and/or water	4 oz. yeast
$2\frac{1}{2}$ oz. malt extract.	

Set the sponge at 80 deg. F. Let it ferment until quite ripe and it begins to drop. Immediately, add the balance of cold liquid ; add raw sugar according to the proportion of milk used, then the salt, and mix into a firm but not too tight dough at 72 deg. F.

Let the dough rise to its limit, give one knock back (by folding), and weigh off. Proceed in the usual manner with dough manipulations, proofing, and baking.

Sponge Dough with Soya Flour

(3 gall.)

Sponge

5 qt. water 77 deg. F.	12 oz. yeast
12½ lb. flour	7½ oz. malt extract
4½ oz. soya flour (untreated)	

Make a smooth batter sponge as described. When air bubbles appear, pour on the balance of liquid, 7 qt., liquid, full cream, or its equivalent of dried milk and water, add 4½ oz. to 9 oz. of raw sugar, 12 oz. salt, and 36 lb. flour.

Mix the dough to a firm consistency at 72 deg. F. Let it come up well and knock back. Let it come up again and knock back once more. Allow to recover then scale off. Proceed as previously outlined manner.

Flours for this recipe should be a blend of one-third each of Canadian, Hungarian, and home-grown flour. Watch the season and outdoor temperature and alter the temperature of the mix accordingly, also the proportion of sponge to doughing liquor. It is a good habit in the doughing stage to work in 1 or 2 lb. granulated flour (almost like semolina). This small addition will add to the beauty of the baked roll and the five curls will show up well. The incorporation of soya flour will hasten fermentation or influence the dough favourably in a cold doughing room or bakehouse. It also improves the tenderness, flavour, and bloom of the baked products. Do not proof the moulded kaiser rolls too much or they will be blind.

Dough with Soya Flour

(3 gall. of 6 hr. with *Poliche Ferment*)

Vienna Poliche Ferment

6 qt. water 71 deg. F.	9 oz. raw sugar
14 oz. yeast	3 oz. soya flour (untreated)
7½ oz. malt extract	10 lb. flour

Make into a homogeneous smooth batter by whisking well.

Let the ferment lie for 5 hr. and, when ripe, add 2 qt. water, 3 qt. milk, $1\frac{1}{2}$ oz. salt, and 38 to 41 lb. flour.

Mix into a firm, good dough to a temperature of 72 to 77 deg. F. Give two knocks back. Work off 20 min. after the second knock back. Usually rolls are ready for the oven two hours after mixing the dough. Rolls made by this process will possess a lovely woolly crumb, have a good break, and remain crisp a long time.

Vienna Sandwich Loaves with Soya

To 44 lb. of kaiser roll dough use 12 oz. of processed soya flour dispersed in 1 pt. lukewarm water. Pull the dough into pieces and add the soya liquid gradually whilst the dough-mixing machine is running. Dust with 2 lb. of flour during this procedure until a smooth dough is obtained. Knock the dough back twice and work off.

The basic 44 lb. of kaiser roll dough should be only half mixed.

This dough lends itself very well for finger rolls which will keep like the sandwich loaves for a few days in excellent condition and possess fine texture.

CHAPTER IX

THE BATON ROLLS GROUP

The baton is the fundamental basic shape for making a number of Vienna and Continental rolls. It has to be mastered to perfection. The correct shaping or moulding of the baton presupposes the ability of perfect and speedy moulding with both hands round dough pieces from $\frac{1}{2}$ oz. to 2 lb.

Perfect round moulding and correctly perfect baton shaping are the preliminaries for a large variety of fancy rolls and loaves made in Europe and America. Without mastery of these two basic manipulations, no baker can call himself an efficient and skilled Vienna table hand neither can he claim a Vienna table hand's wage : most emphatically I contend he has no right to.

During my forty-four years' experience in thousands of bakeries in Great Britain and Ireland, I have seen a mere few hundreds of bakers whom I would class as first-rate Vienna table hands.

There are three phases in the shaping of the baton.

First : Bash the round dough pieces (correctly fermented) with the heel of both hands alternately, namely : first bash with



French Batons

left, second bash with right hand. The result is an oval or elliptical shape with two lip-like thick parts and a thin groove along the centre.

Second : The one thick part away from the operator is firmly pulled with the index, middle and ring finger of both hands towards the groove along the centre and firmly pressed down in one motion. This manipulation is repeated in reverse, *i.e.*, from the operator's

body to the centre of the dough piece. Two further bashes follow, right, left, with heel of both hands, sealing firmly the formerly two thick parts along the centre.

Third : Finally the now elongated oblong dough piece is gently rolled into (a) a cylindrical baton with small pointed ends, (b) cylindrical baton without pointed ends, and (c) into shuttle shape as required.

The finished roll must possess uniform firmness, smooth surface, symmetry, and the sealing must show a straight line. For the learner, great care and patience is necessary. In time, by practice and perseverance, accuracy and speed will develop.

I trust the above description will be helpful to the reader. I cannot help remembering the pain it caused me, every time I saw an indifferent, careless, and slipshod manner of moulding such



London Vienna Loaf

simple shapes as finger rolls, even round rolls or buns—and for that matter—any shape.

The baton shape group includes the following :

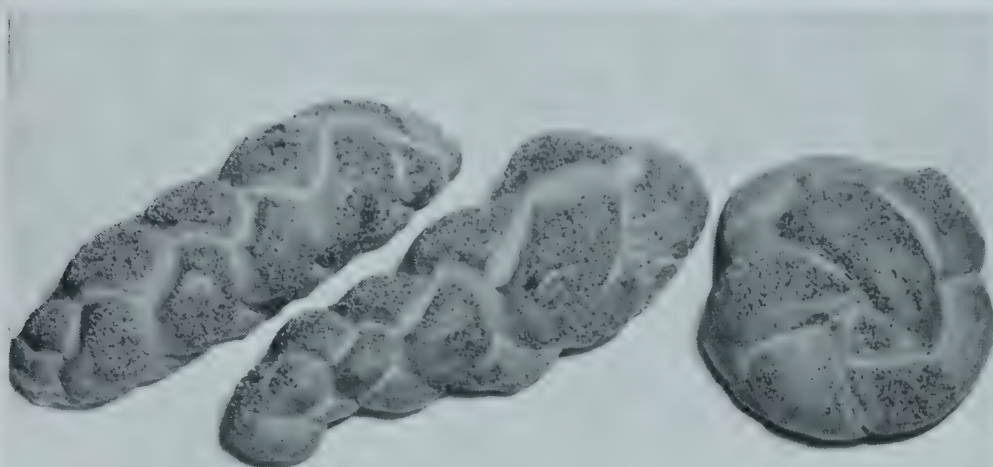
1. Vienna sandwich loaf
2. French baton
3. Finger roll
4. Vienna patent roll. (patent Weckerl)
5. Swiss Finger Bun
6. Bridge Roll (Vienna Wecken)
7. Shell Roll
8. The Vienna bridge roll—French fashion.

9. Strands for plaits and twists, knots, and similar fancy shapes.
10. Curled one piece "cottage" loaf (Vienna Giraffe).
11. Coronation loaf ; in Germany called Kopenhagen loaf, in Vienna Wandlstrizl, made from milkbread or brioche dough heavily fruited.

All these are shaped in the same manner as described above, with differences in width, length, round or pointed ends, or cylindrical or shuttle shaped.

The *Vienna Sandwich loaf* resembles an English finger roll but weighs 1 lb. It is proofed on cloths with the close, or seal, down, and covered with a cloth.

When proofed it is stabbed four or five times with a knitting needle and baked in steam for 25 min. or so. The sandwich loaf



Vienna Mohn Strizl

Baches

Vienna Knopf

is made from kaiser roll dough and, therefore, possesses a close and even texture. The slices of the baked loaf are elliptic, not square or rectangular, and are used as a base for multifarious meat dishes, savouries, and suchlike.

Very seldom is English sandwich bread made, if it is, it is called Crouton loaves and solely used for toasting as required by British and American guests in hotels. They are good toasters because in the dough, sugar, milk, and malt are used.

The *French baton roll* is well known here in Great Britain. Proof the 4 to 5-in-long cylindrical batons with just a shade of a point on cloth-covered boards. About 10 min. before setting, condition them in cool surroundings and expose them to a current of cold air. Bring to the oven, turn them over, and cut with a sharp-bladed knife, or a specially bent french steel blade—three to four times for plain batons.

More popular are the flour-dusted type. Before cutting, dust them through a small wire-meshed sieve.

When cut, let stand for about 5 min. to allow the cuts to spread, and then the baked batons will show beautiful cuts, making them most attractive.

In large Vienna bakeries every man working at the table has by his side a thin board large enough to hold five batons. As soon as each baton is shaped it is put on this small board. When the board is filled, the operator slides the batons with board on to the cloth-covered board for proofing. Much time and unnecessary



Couronne Loaf

movement with feet, body and hands is saved. When the board is full, the batons are gently pressed down. This will contribute to the beauty and perfection of the finally baked baton roll.

Batons are baked in steam for about 17 min. at 420 deg. F., dependent on the composition of the dough, which usually is not as rich as kaiser roll dough and of a slacker consistency.

English Finger Rolls should be made as described and not just rolled to and fro as seems to be the bad custom. It is a slovenly habit and should not be indulged in by any craftsman with self-respect. It should not be suffered by the foreman, manager, or principal.

Proofing and baking is well known and I do not need to say any more about it.

The Vienna Patent Roll. This class of roll is the pride of every Vienna baker. Ingredients for the dough differ vastly. I shall give a few recipes of noted bakery firms of Vienna.

From this roll the bridge and finger rolls of Great Britain and United States descend ; the original roll is not longer than 3½ in.

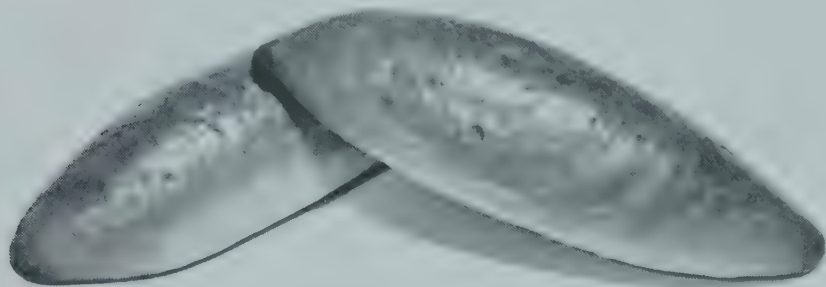
and is slightly tapered, with round ends. It is in fact a roll with a curve. The dough is enriched with milk, malt, sugar, and fat.

Mould them as described at the beginning of this chapter and bake on sheets or on the oven sole.

If the latter, they are proofed on cloth-covered boards or in boxes, with very little steam.

Bake in steam, and the oven temperature and baking time will depend on composition of the dough, but it is usually 400 to 410 deg. F.

Oven bottom rolls score over the other kind, both in appearance and eating quality.



Vienna Bridge Rolls

Swiss Finger Buns. The above remarks apply to this class.

Vienna Bridge Roll (Wecken). A variety of doughs are used by the Vienna baker and a like variety of sizes ; the shape remains the same ; shuttle shape with long, tapered ends.

Small bridge rolls, $\frac{3}{4}$ oz., made from a rich brioche dough (unsweetened) when baked and cold. A small part of the top crust is carefully cut off and the crumb removed. The shell of the roll is filled with caviar meat forces, fois de gras and suchlike and make exquisite and dainty savouries.

Shell Rolls. This roll is made from kaiser dough or French bread (water) dough. The shaping is similar to the Vienna patent roll. It is proofed on cloths with the close or seal down and turned over when setting. This roll shows a beautiful break when baked ; cutting with a knife is not required.

Vienna Bridge Roll—French fashion. I applied a Belgian manipulation, namely, a cut to the customary Vienna bridge roll (Wecken) made from kaiser dough, and obtained a most attractive and novel appearance. Mould the dough pieces in Vienna bridge roll fashion, set side by side in rows on cloth-covered boards, and, when sufficiently recovered, cut the tops with sharpened French steel once. Turn over and allow to proof. Air and draught conditioning can be applied as with French batons. When setting turn the rolls cut upwards. The result is a crisp roll with two

pronounced razor-like ridges and beautiful break as can be seen from the illustration.

Strands for Plaits, Twists, Knots and similar shapes. Whatever the size and weight of the single strand composing in multiple the twist or plait—it must be made primarily like the baton, adhering in every detail to the three phases of baton shaping, as indicated above. The varying lengths of the strands and their pointed ends are, if I may use the comparison, bridge rolls of different sizes and length.

Grassinis, Soup Sticks, Cheese Straws. Give every small dough piece at least one baton fold, rolling it 2 in. long : the skilled baker can manipulate one roll with each hand simultaneously. Lots of five dozen or so are dusted and shuffled about as described above. Keep the pieces close together. Another five dozen lot follows in a similar manner. When sufficiently recovered, roll every piece to the required length, using gentle pressure with both hands. Put every strand carefully across the greased baking sheet, parallel with each other, being sure to allow sufficient proofing space.



Grassinis, Soup Sticks, Cheese Straws



Austrian "All Saints" Plaits

When ready for the oven, mark the desired length of the straws, etc. with a Scottish scraper or French knife by pressing right down to the baking sheet. Wash with cold water, or flour scald wash, and bake in a medium oven. When baked, these thin sticks or straws, which must be brittle and crisp, will break easily at the markings. They are made into bundles of six or twelve and tied together with a daintily coloured ribbon to be displayed for sale.



Continental One Piece Cottage (Giraffe)

Continental bakers have used machines for the past twenty years or so for cutting the dough or paste strips, which are placed into the furrows or corrugations of the special baking sheets. The corners of the machine-cut strips disappear entirely during proofing and baking.

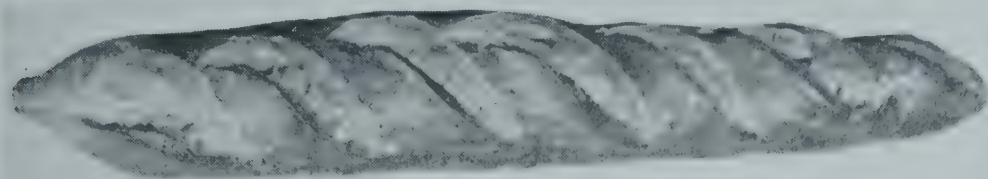
Enterprising bakers may be able to do some very good business in collaboration with the licensed victuallers. Goods of this kind are appetizers and go well with beer and similar beverages.

Curled one piece Cottage (Giraffe). This a typical Viennese shape, easy to make, attractive to look at, and it has a superb crumb texture. Weigh 8 oz. or 1 lb. pieces, hand up, and when recovered, shape batons in two stages.. At first, shape only half as long as required. Finally taper the long baton and curl up by holding with the left hand's thumb, index, and middle finger, the one end which is the centre of the loaf to be shaped. With the left hand turn the baton to the left whilst the thumb, index, and middle finger of the right hand are continuously gently pulling until a perfect loop has been formed.

The loaves can be put into cottage pans, proofed, and baked or they can be proofed on cloths, in boxes, and baked on the oven bottom.

Before setting, the loaves are washed with cold water and baked plain or dredged with blue poppy or mawseeds.

A very fine looking loaf is obtained by just sieving plain flour over the top (without previous washing). By the way, it is not at all necessary to push the tapered end of the baton underneath the loaf. This is done only by dabblers. The efficient table hand finishes



French Bread

the end of the baton as a quite thin, filmlike part which will adhere to the body of the shaped loaf if properly shaped as described. Small rolls about 1 to 2 oz. are manipulated in the same manner and may be made from kaiser rolls, mellow milk, or brioche dough.

Long French Loaf. Weigh off pieces at 8 oz., 1 lb. or 1½ lb., fold with both hands into oval shapes, and lay up with the smooth side towards the boards or table. After recovery, grip each dough piece with the right hand and slap it on the table with a loud bang. Fold and pull with the finger tips and bring alongside the front table-edge. With very slack doughs (about 13 lb. of flour to 1 gall. water) it is essential to use the knuckles of the right hand by holding the outstretched thumb of the left on the dough piece and at the same time folding the part of the dough piece farthest from the operator with the fingers of the left hand over the thumb and following this up with a pronounced bashing of the right hand's root. This is interspersed with hammering of the knuckles and repeated nine to ten times, commensurate with the weight of the loaf.

The root of the right hand follows quickly and deftly the receding thumb of the left which glides swiftly from the right to the left of the cylindrically shaping loaf. Bakers call this manipulation "knocking into shape." This knocking with the knuckles is merely a different but most efficient way of moulding French long loaves or "yardsticks" from a slack dough and only a skilled baker can deal with it. Such French loaves, when fully proofed between folded cloths on boards, have to be set with a special setting board on the slip peel. On the other hand, the loaves may be proofed in long, narrow, cloth-lined baskets, and tipped out on to the peel.

The diameter or thickness of the French loaf (Vienna loaf in Great Britain) is determined by gentle pressure and moulding action

with the left hand from the centre of the dough piece. The left and right simultaneously mould and slide towards both ends or sides and finishing with a decisive squeeze of the two little fingers, making nibble-like ends. Thus, a perfect cylindrically shaped loaf without tapering ends is produced.

Doughs made with 16, $15\frac{1}{2}$ or 15 gall. of liquor to the sack of flour (280 lb.) do not need the above mode of moulding. The usual way of moulding a long loaf as practised here in Great Britain is quite in order, provided every loaf is firm throughout, with a smooth surface and is cylindrical in shape. Bloomer fashion moulding should not be encouraged for this type of loaf, because the texture of the baked loaf will be too close. Loaves with large holes are obtained from slack doughs and by simultaneously pulling and knocking with the knuckles of both hands.

In Scotland the bloomer shape is known as the Vienna loaf embellished with five to seven cuts. In many parts of England and Wales the shuttle-shaped Vienna loaf prevails. The one difference from the shuttle-shaped Vienna is in the cuts. In Austria this loaf is stabbed with a knitting needle three times, and possesses a perfect smooth surface.

The moulding of the shuttle shape, large or small, I described under the Baton Rolls Group.

An excellent method of moulding is practised all over Great Britain and Ireland, namely, shaping one dough piece with both hands with finger tips almost touching and outstretched thumbs, meeting each other. No bashing or slapping is applied nor is any noise made. With slack doughs this way of moulding is not efficient at all in French bread making.

CHAPTER X

ROLLING-PIN-MANIPULATED VIENNA AND CONTINENTAL ROLLS

A wide range of Vienna and continental rolls and loaves can be made from plain, milk, fancy milk tea bread, rich brioche, and plunder (Danish) doughs and given their final shapes by means of the rolling pin, which in fact is of greater importance than the Vienna or French knife.

The Pistolet, Baunzerl, or Split Roll. This type is very popular in all Continental countries and in Scotland. The perfect finish of this roll can be achieved only by using a slightly greased rolling pin not more than 1 in. diameter. For expediency, the greased side of the hand, or a V-wedge-shaped wooden docker are also used. The Austrian baker still keeps to his rolling pin.

The well moulded, round, dough pieces, 1 to 1½ oz. are put symmetrically in rows with the close upwards on to cloth-covered boards. Let them proof for 10 min. or so, when they can be easily manipulated with the rolling pin. Put the board with the rolls in front of the operator or table hand, allowing sufficient space along the front edge of the table for manipulation and putting away the shaped rolls. Grease the rolling pin not more than 3 or 4 in. from one end and hold the dry end with the right hand. With the left hand turn the round dough piece upside down near the table's front edge. Press the rolling pin's greased part firmly down the centre of the roll, leaving a thin, transparent film of dough between the two halves.

With thumb and fingers, join the two halves together gently and put them back on the cloth-covered boards with the connecting dough film up, allowing sufficient space for full proof.

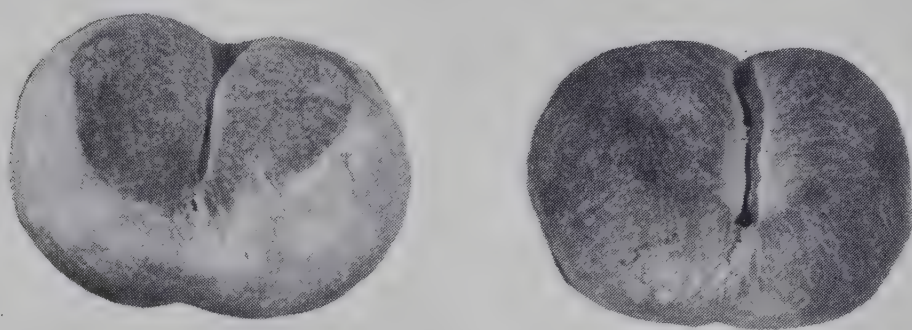
Before baking, expose to a draught of cold air if necessary or desired.

These rolls, more or less enriched with milk, sugar, fat, soya flour, and suchlike, are baked on the sole of the oven or on baking sheets. In the latter case they are put on baking sheets with the split up and, just before setting, are washed or sprayed with cold water.

Continental bakers of different countries adopt different procedures in working off or manipulating these rolls. Belgian bakers for instance, put the round moulded dough pieces with the close

down, either on a slightly dusted table or flour dusted boards. When recovered, the smooth tops are touched with a greased brush or they are just dusted with flour. With a V-wedge-shaped, wooden docker the pieces are docked down the centre, and put between cloths—four or five in a row on the board.

The setting is done as follows : The oven man uses a small, smooth, plywood board about 5 in. by 16 in. tapered on one long side. He holds it with the left hand and shoves it towards the end row on the right, pulling the cloth with his right hand and at the same time turning the row of five rolls on to the setting board. Now he slips the rolls on the slip peels, filling them as required, or on the broad Vienna peel. A Vienna peel head, of 22 in. by 14½ in., holds six rows of four. With the Vienna peel two to three loaded peels are set



Pistolets

side by side, and setting starts from the back of the oven chamber in a straight line towards the oven mouth. By setting in this manner it is possible to draw the rolls in the same order as they were set, thus overbaking or burning is prevented.

Austrian bakers set all classes of oven bottom rolls in this way, except that they avoid proofing between folded cloths and dispense entirely with the setting boards. They have two rolls in each hand, put them in one row of four across the broad peel head and in six rows thus giving the customary load.

Setting with the slip peel, unknown in Vienna, and the greatest part of Austria, is performed by starting with rows of six to eight rolls in the diagonal from the front of the baking chamber and finishing at its back, thus making a herring bone pattern. This is followed with long rows of rolls filling or covering the whole length of the slip peel's blade and as close as possible to prevent touching until two-thirds or three-quarters of the oven sole are covered. The setting of the remaining space is left to the baker's preference. He can weave a sun ray pattern by avoiding small space pockets. As an alternative he can set in herring-bone fashion from the oven

mouth towards the back, finishing with one or two full length peels of rolls, lifting the blade vertically. This, of course, has to be practised.

Setting of rolls on baking sheets is performed in a like manner. Namely, two sheets are set side by side from the back of the baking chamber in a long row towards the oven mouth.

The drawing of oven-bottom-baked rolls by the experienced craftsman is done with the sensitive broad-headed Vienna peel, possessing the supple, fishing-rod-like handle. With it he lifts carefully and quickly 30 to 40 rolls from the oven sole and deposits them on the iron grate table near the oven mouth's right or left side. The apprentice or assistant journeyman, specially assigned to oven work, washes them if necessary, and slides them into a basket situated at the correct height to avoid damages.

Rolls on baking sheets are drawn by the ovenman ; an assistant takes them from the peel and slides the rolls into the basket. Sometimes the rolls are glazed with Vienna wash. Again this is done by the apprentice, or ovenman's assistant, who takes the baking sheet with his left hand from the ovenman's peel and supports it underneath with the back of the long handled bread wash brush. After resting the baking sheet on the side of the iron grate table or on the basket, he swiftly brushes over the surface of the rolls and slips them into the basket.

Rolls drawn from the oven sole are deposited by the ovenman, peel load after peel load, on the iron grated table, glazed by the assistant, who sorts out "cripples" or ugly ducklings and drops the others into the basket.

Viennese Gschrade or Double Pistolet (Four-in-one Roll). This shape is very attractive : the late John Kirkland named it "Maltese Cross." When baked, it can easily be broken into four tiny rolls. It is very suitable for the dinner table ; only the kaiser roll outshines its beauty. It has the advantage of being one hundred per cent. easier to shape. Three-quarters of an ounce or 1 oz. dough pieces are moulded round, layed up, and, when recovered, two pieces are gently pushed towards each other and manipulated with the greased rolling pin as for the pistolet. A lovely four-in-one roll is the result.

The rolls are proofed upside down on cloths. To expose them a few minutes before baking to a draught of cold air, when dealing with large numbers, is very good policy. These twin rolls may be baked plain, or before setting they can be dusted with flour or dipped into poppy seeds or a mixture of granulated salt and carraway seeds. (Illustration). The dusting is done by using a fine meshed small sieve, tapping the side of the sieve with one hand and holding it with the other hand, moving swiftly along the board over the rolls.



Viennese Gschrade



Swiss Fendu Loaf

Almost all classes of rolls, where dusting is mentioned, are treated in the same manner.

Of course, the rolls have to be turned over by the assistant or apprentice before finishing them off as mentioned. They are placed back on the boards and put near the oven in such a position that the



Four Piece Rolls

ovenman can work comfortably and with speed, whether standing in a pit, on the bakehouse floor, or on a platform. Continental bakers sometimes use three-deck, steam-pipe ovens.

Emperor's Baton Roll (Kaiser Weckerl) (see page 68). Make shuttle-shaped batons about 3 in. long and lay up on cloth-covered boards or, if only a few dozen, on the table. When recovered, use the greased rolling pin, pressing it lengthwise through the centre of the baton. Plain batons place immediately on the boards to proof : others, wash with cold water and dip them as required in poppy seeds or a blend of coarse salt and caraway seeds. Place them with the seed-covered side on to cloth-covered boards.

The Swiss Fendu. The fendu is a shuttle-shaped roll of 8 oz. or 1 lb. Final shaping with the rolling pin is performed in the same way as described above with Emperor's baton.

Large Split Baton Loaf. From 8 oz. or 1 lb. dough pieces prepare long tapered batons, fold the ends over each other, and bash firmly down with the palms of both hands. Fold one long side of the loaf towards the centre and seal well with the knuckles of the hands with a pulling movement. In this way very slack dough pieces are manipulated most efficiently. The skilled baker's rhythmical shaping can be distinctly heard ; it is a slap followed by two bashes of the palms and the knocking of the knuckles.

Finally, mould into short cylindrical shapes with rounded ends. Lay up on boards with close or sealed seam down and, after

recovery, manipulate with the greased rolling pin as for the Emperor's baton roll or the fendu. Put on boards between cloths two in a row.

Mr. Woodgrove, of York, deals with thirty 1 lb. loaves on one board 5 ft. by 6 ft. The boards are slightly dusted with rye cones, and the loaves he puts with the smooth side towards the dusted boards. About a dozen filled boards find room in wooden proofers which are gently warmed and, when closed, have just sufficient humidity to aid the final proof. In this manner, he avoids the use of cloths. Before setting, the loaves are turned over and the adhering rye cones are brushed off before cutting. By the way, Mr. Woodgrove is one of the finest Vienna bread craftsmen I have met in this country.

The Danish Loaf. This is shaped and moulded in the same way as described above. Folding between cloths has, of course, the advantage of conditioning the loaves with exposure to draught after being proofed.

Set on Vienna or slip peels, dust finely with flour and give one cut from one end of the loaf to the other. Bake 8oz. or 1 lb. loaves at 430 deg. F. on the drop.

The Viennese Horseshoe (Radetzky Kipfl). This most attractive crescent roll is not known in Great Britain. It can be made from a milk bread, bun, or a brioche dough.

From the moulded and recovered dough pieces, make long (4 to 5 in.) batons with pointed ends and put them in symmetrical rows on the table or boards, smooth side up. Let recover and place the roll parallel to the edge of the table. With the greased rolling pin press through the roll from end to end, dividing the roll, without severing, into one thin narrow part, about a third, and a thicker one. Bend the roll into horseshoe shape, putting the thicker part on the baking sheet. The division of the two parts of the horseshoe must be on the outside.

This is the most perfectly horseshoe-shaped roll the baker can make.

Viennese Crescent Rolls : Their History and Making

It was one of those sultry long nights during 1683 in Vienna that a lone journeyman baker near the Freyung heard a faint tapping sound at regular intervals coming from beneath the bake-house. He told the home guards. So it happened that the Turks' attempt to mine right into the heart of the city was foiled.

The picture showing that historical episode is hung in Vienna's beautiful Bakers' Guild House. The late Mr. J. H. Macadam had a photo-copy of it which I brought him from Vienna in 1930.



Danish Loaf

Visitors to the once gay but now prostrate City of Emperors can view the very spot. Herr August Fritz, or his sons, carry on one of the finest bakery businesses of Vienna at I. Naglergasse No. 13. Should Swiss confreres call on Herr Fritz, they will find ample food for thought and much inspiration when looking at the bakehouse, the shop, the productions, and watching the personnel's manners, elegance, tact and modesty.

In memory of the journeyman baker's lucky discovery, the crescent-shaped milk roll, Kipfl, was evolved by some ingenious member of the craft, and, as everybody knows, it is made in all civilised countries.

The Kipfl family is a most representative one. In Vienna, Austria, and, for that matter, in all Central Europe, the most



Uhl Kipfl

popular variety is the Murbe, or mellow Kipfl, made with milk, malt, sugar, and butter. Other members of the noble family are the Radetzky, Uhl, Peregrini, Badener, Carlsbader, Butter, Brioche, Kloster, Ham, Vanilla Kipfl and the Pressburger Walnut and Mohn (poppy seed) Beugl. These varieties are household words in Austria. Everybody, young or old, rich or poor, labourer or lady of society, cherishes them and loves to steep their Kipfl gradually, inch by inch, into their morning or afternoon coffee, when eating it. It tastes so much better that way. Americans adopted this custom when drinking their coffee and eating doughnuts with it. They dunk the doughnut inch by inch. Tunken is the German word meaning "to dip."

Neither the Vienna Kipfl nor the Croissant Parisien are strangers in Great Britain. My colleagues and I made them in London by the thousand every night forty years ago and many of

my countrymen colleagues did so long before we chose England for our home.

The Vienna Kipfl has an honoured position at the breakfast table in the highest circles of England's society. During my last sojourn in Vienna, from September, 1933, to February, 1934, I received a letter from the late Sir Philip Sassoon asking me to call on him at his Park Lane residence when returning to London. Whilst waiting in the spacious lounge before luncheon I noticed on the mantelpiece two photos. Just two and no more. One, Sir Philip with the children of his beautiful sister, the Marchioness of Cholmondeley, and the other, Dr. Dollfuss, then Chancellor of Austria. Dr. Dollfuss, Dr. Kurt von Schuschnigg, and I, were, during the first world war, officers in the Austrian army ; but that



Croissant Parisien

is by the way. I met Sir Philip, his sister, and her daughter. Sir Philip asked me to show his chef and assistants how to make Vienna Murbe-Kipfl, which I did with understandable pleasure and pride. I introduced the Vienna mellow milk Kipfl to several distinguished houses ranking high in Society.

This particular kind of Kipfl is different from the ordinary crescent as known in England or anywhere on the Continent, bar Austria, or in the U.S.A. It has a fascinating, tender, crisp crust and a delightfully tasting crumb with a beautiful creamy tint.

There are two ways of baking, either on baking sheets, or set on the hearth of the oven. The latter is the more laborious, but it

excels all the time. The hearth Kipfl is the pride of every true Vienna baker, like the Emperor's (kaiser) roll. Its making, manipulation, and baking technique are some of the many necessary attributes to qualify him as a journeyman craftsman. A few of us older Vienna bakers demonstrated this speciality at the Austrian National Exhibition at Earls Court in London in 1906 and at Dorland Hall, Piccadilly, in 1934. Old readers of *Confectionery and Baking Craft* will remember my narratives under the titles "*Rambling Remarks*" and "*Rare Recipes*."

Now I am giving the formula and method of making and baking this delightful Vienna bakery production. Quality craftsmen, bakers of the first order, should cultivate its making and sale. This would also apply to all the other varieties of crescents. The popularising of the crescent rolling machine all over Great Britain, during the past few years, should give a great impetus to the British baker to give the public something new and exquisite in taste, shape and appearance.

Vienna Mellow Milk Kipfl (Crescents).

1 gall. milk	1½ lb. sugar (preferably lumps)
16 lb. national flour (variable)	2¼ lb. butter fat (butter melted, solidified and the curd removed and liquid drained off)
12 oz. yeast	
4½ oz. salt	
2 oz. malt extract (liquid)	¼ oz. zest of lemon
Prepare a sponge from :	
2 qt. milk 90 deg. F.	2 oz. malt extract
12 oz. yeast	4 lb. flour

Disperse the yeast in the milk, dissolve the malt extract, and draw in all the flour. Give a good slapping with both hands until the batter is quite smooth and throws up air bubbles. Cover the sponge with a ¼ in. layer of flour and let it ferment for not longer than 20 min. Sponge temperature should be 78 to 83 deg. F.

For doughing up, pour on the sponge the balance of the cold milk and add the sugar and lemon zest : lemon oil or essence may be used instead, but use them very judiciously.

Mix the dough and, when half mixed, add the butter fat and dredge the dry salt over the dough and mix into a good, pliable, but not too stiff, dough. It is better to have it on the slack side.

Let it rest for 45 min., but the temperature must be not more than 72 deg. F. Give it a good braking with the forearms and work off in another 20 min.

Scale off at 3 lb. 6 oz. for a bun divider cutting 36 pieces.

Mould round, as for buns, and let the pieces roll over the flour-dusted table.

When about 40 or 50 pieces have been moulded, dust over with flour, shuffling the pieces with both hands.

Knock off the flour by scooping them in both hands and shaking the pieces. Lay them neatly beside each other and cover with a clean, light cloth. Repeat this procedure with every batch of 50 rolls or so.

Shaping

When moulding is completed, start with the first lot by rolling them out with the rolling pin or crescent moulder into about 5 in. long, oval shapes. Always pin out two pieces at once. A skilled table hand can comfortably handle four to six pieces in one operation. Put eight pinned-out pieces on top of each other, making neat heaps.

When rolling the pinned-out ovals into crescents, begin with the first heap and so on, turning the heaps upside-down and pressing the eight pieces gently with the flat hand.

The end of the shaped crescent must be quite thin and sealed to the main body of it.

Put the crescents on to greased baking sheets (avoid slab oil) with the sealed end towards the tin and pointing away from you. Let them proof in gentle steam at about 90 deg. F., but do not give full proof or the crescents will be "blind" when baked.

If proofed in dry proofer, wash slightly with cold water before setting, otherwise there is no necessity for it.

After-Baking Treatment

Bake in steam with an oven temperature of 400 to 410 deg. F. When baked, glaze with Vienna wash, made from 1 oz. cornflour (fecula) slackened in a few ounces of cold water and this scalded with 1 qt. of boiling water.

The Hearth Kipfl is put on to boards and covered with a clean cloth, but the sealed end should be on the top pointing away from you. They must be proofed in dry warmth and should be exposed to a cool draught of air, allowing a skin to form. Do not over-proof.

In this condition the crescents can be stored in a refrigerator for many hours and baked when required.

Refrigerated Doughs

In Austria, from 5 p.m. to 5 a.m. these crescents rested peacefully in a temperature of about 38 deg. F., then were taken into the bakehouse for about 15 to 20 min., then baked. At 6 a.m. the vans were already on the road to supply the customers.

To ensure success it is important to observe the following

hints : Before setting, scuffle the space where you intend to place the hearth crescents. Set immediately and make sure of a plentiful supply of steam. Do not over-bake.

The crescents are set with a genuine Vienna peel. The peel head measures 22 in. by 14½ in. and it has a sharp front edge. The peel handle is 1 in. in diameter and protrudes 14 in. from the oven mouth when the front edge of the peel head touches the back of the baking chamber. A Vienna peel must be as supple as a fishing rod. This, for the Viennese craftsman baker, is an important as is the bow for the violin virtuoso.

Supple Peel Essential

When gripped with both hands the handle of the peel must bend as a fishing rod. The slip, quite wrongly called Vienna peel, is not in use in Vienna, because no French loaves (yardsticks) are baked ; only in certain parts of Austria bordering on Switzerland and Germany does one find the slips in use.

Hand- or machine-rolled and rich butter crescents can be treated like the hearth kipfl. They can be proofed on boards covered with cloths and put into a cold, draughty place. In winter, they can be put outdoors, even on the frost-covered lawn, as I demonstrated to Mr. Harry Crisp, at Hatch End, some years ago. They can freeze, be put on baking sheets, thawed for about 20 min., and baked. I do this with my Vienna dinner or luncheon rolls, with Danish, Dutch and Plunder pastries. Ice in my sponges, draughts



Vienna Horse Shoes, made from milk dough

and a cold environment, deliberately applied, always assure success and unsurpassed flavour and tender crisp crust.

Radetzky Kipfl or Horseshoe

This speciality is now not very often seen even in Vienna, but it is very attractive and is more easily made than the crescent ; but, lo, there is no machine for it yet.

Field-Marshal Count Radetzky was one of Austria's greatest soldiers one hundred years ago. As a young lieutenant he served under Prince Schwarzenberg, who was the commander of the Austrian Army which fought with Marshal Blucher and Wellington against Napoleon at Waterloo. My grandfather served in all the campaigns with Radetzky against the Italians and was one of his best artillery staff officers.

For the Radetzky crescent use the same dough as for the mellow milk crescents. Mould round and, after recovery, make a long bridge-roll shape. Put them side by side in order on a dusted board or on the table. Let them rest for 10 min., then grease a suitable spot of the table near the front edge. Place a bridge-roll shape on it and press a thin, greased rolling pin through the roll lengthwise, dividing (but not severing it) into two parts. The two parts should not be of equal size. Bend the manipulated roll into a horseshoe shape and place on greased baking sheet. Give full proof and bake in steam-filled oven at 410 deg. F.

Glaze with Vienna wash when drawn.



Vienna Butter Crescents

Vienna Butter Crescent

In Vienna it is known as Parisian crescent, but it differs from the roll known by that name here, shape, ingredients, fermentation, manipulation and baking technique ; therefore, I am justified to give this speciality its correct name.

Between the first and second world wars this butter crescent was quite the rage in Vienna. Its originator is Herr Karl Schambureck. Without exaggerating, I regard him as the greatest Vienna baker in the world. He is not only the greatest master craftsman and a model employer, but also a good business man who has always insisted on the highest standard of quality and workmanship. He deals fair, pays every employee at least 33 per cent. above trade union wages, and a double week's wages at Christmas and on the anniversary of his birthday. Daily he provides his staff with free coffee and cream. On Sundays he used to take members of the staff with their wives to the Vienna Forest in his car and had the meals with them in the best restaurants. He flew his own aeroplane and was known as "The Flying Master Baker," supplying, personally, hotels and restaurants hundreds of miles from Vienna. I do not think there is any baker who can equal him in enterprise, business acumen, and quality production.

Ingredients for 1 gall. Vienna butter crescents :

1 gall. fresh full-cream milk	8 yolks of eggs
13 lb. flour (variable)	3 oz. sugar (Tates lumps or raw cane sugar)
8 oz. yeast	
4½ oz. salt	8½ lb. butter
3 oz. malt extract	1½ oz. zest of lemon

Prepare a half sponge at 67 deg. F. with :

2 qt. cold milk	3 oz. malt extract
8 oz. yeast	4 lb. flour

Sponge temperature 66 deg. F.

Make a smooth batter sponge as described for mellow milk kipfl. Allow it to ferment about 2 hr.

Add to the sponge, the balance of the cold milk (or use 25 per cent. chopped ice instead of milk), the yolks, sugar, salt, and lemon zest, and begin to mix the dough. When half-mixed, add 8 oz. softened butter and finish mixing. The dough must be well braked with the forearms to obtain a smooth well-made dough and the temperature should be 62 to 68 deg. F. Let the dough ferment for 1 hr., then divide it into 4 or 8lb. pieces and roll in the remainder of the butter (or margarine), allowing the appropriate proportions of butter to the dough pieces. This is done by rolling each piece into a rectangular shape as for puff paste and covering only half the dough surface with small pieces of butter which has been softened

by kneading with some flour. Put the uncovered half of the dough on top of the battered half, seal the edges, and roll once more into a rectangular shape. Fold the left and right ends towards the centre and join them. Pin out evenly and fold like a book. Let it rest in a cool place, refrigerator for preference, for half-an-hour at least, but up to two days if you like. This was practised successfully for a fortnight at Ormeau's bakery in Belfast where I demonstrated Vienna specialities.

Final Details

Give the paste a final half turn, let it rest and recover, then begin to work off as follows : Roll the paste flat, cut it into 3-lb. pieces, keeping them as round as possible. Pass through the bun divider (36 sections) and roll the small dough pieces with the rolling pin carefully into oval shapes. (The semi-automatic divider cannot be used).

Give a final crescent shape, put them on baking sheets (about 16 on each), and wash immediately with milk. Let proof for 40 or 45 min. in the bakehouse, or in the humid proofer, or store in the refrigerator for 12 or 24 hr. Before baking, wash with cold water.

Bake in steam-filled oven at 400 deg. F. for about 15 min. When baked, wash with Vienna wash.

At present, cake margarine instead of butter can be used successfully. In normal times, pliable nut fats or nut butters are excellent for this crescent. There are some good butter flavours on the market.

Parisian Crescents

(1 gall. dough)

14 lb. of flour (variable)	4½ oz. salt
3 qt. water	4 oz. sugar (Tates lumps, or raw cane)
1 qt. milk	
8 oz. yeast	4 oz. fat or margarine
Butter or margarine for rolling in	

Prepare a sponge at 78 to 80 deg. F. with :

3 pt. water	1 oz. sugar (raw)
8 oz. yeast	3 lb. flour

Let this ferment for 20 to 30 min.

Make a dough with 5 pt. liquid (milk and water, cold), pour it into the sponge, add the balance of flour, sugar and the salt, clear the sponge and mix in the same way as for Vienna butter crescents. Dough temperature should not be higher than 72 deg. F., the best temperature being between 62 and 68 deg. F. The sponge may be made as for butter crescents.

Let the dough ferment for 1 hr. in bakehouse temperature, then scale off into 4lb. or 8lb. pieces. Allow 3 to 4 oz. of butter, cake margarine, or nut butter for each pound of dough, for rolling in. Roll the butter in as for Vienna butter crescents, let the pieces rest, then treat and/or store as outlined above.

Work off in the following manner : Roll out to $\frac{1}{5}$ in. thick in rectangular pieces. Cut $2\frac{1}{2}$ in. wide strips with a sharp knife, holding the blade at an angle of 45 deg. Place each strip towards the edge of the table and parallel with it, then cut triangular pieces holding the knife all the time slantwise. Begin from the left top end of the paste strip, drawing the blade of the knife diagonally towards the table's edge ; a vertical downward cut follows. Thus every time we make two right-angled pieces.

The hypotenuse of each triangle should be $6\frac{1}{2}$ in. long, the two other sides $5\frac{1}{2}$ in. and $2\frac{1}{2}$ in. Make little heaps of six pieces, putting them in order side by side.

The shaping of the croissant is a squeezing and, at the same time, a rolling up manipulation. It is better to do this on a strip of canvas cloth or on a jute bag, which can be held firmly to the table by a 4lb. weight, at the top end of the cloth. The rough surface of the cloth helps to prevent slipping and ugly shapes, and is especially helpful to the learner.

Put the crescents on to slightly greased tins (no slab oil) and proof in a humid, but not too warm, proofer. Before baking, wash with cold water and bake in a steam-filled oven at 480 to 500 deg. F.

In the warm season, $12\frac{1}{2}$ per cent. of chopped ice instead of water should be used when mixing the dough.

Vienna Brioche Kipfl or Crescent

This is made from the usual Vienna brioche dough.

1 gall. brioche dough:

1 gall. milk	$3\frac{1}{2}$ lb. butter, margarine, and
18 lb. flour (variable)	lard
$1\frac{1}{2}$ lb. yeast	$1\frac{3}{4}$ pt. eggs
3 oz. salt	2 oz. malt extract
$1\frac{1}{2}$ to 2 lb sugar (Tates lumps, raw cane sugar if possible)	1 oz. lemon zest
	Rum or rum essence

Work up as a straight dough or third sponge method as outlined above. Sponge should rest not longer than 15 min. at a temperature of 80 deg. F.

Straight dough procedure is as follows :

Make a dough with all the ingredients, squeezing the butter or fats between fingers and thumbs in the liquid. Use ice in summer months to the equivalent of a sixth part of total liquor. Dough temperature should be 68 to 72 deg. F. Knead and brake the dough

well when mixed. Let it ferment in bakehouse temperature for 45 min., then give a good knock back, folding over and braking with the forearm once more.

This 'braking with the forearm' sentence appears to be rather boring, but I feel it to be my duty to emphasise this important feature in the finishing stages of correct mixing and kneading of doughs.

I remember very well one night at Lyons and Co.'s Cadby Hall Vienna bakery in 1907 mixing a brown Vienna roll dough by hand. The doughing liquor was ice cold and the salt caused me physical pain. I was tired and thought I would save myself the trouble of giving the dough the forearm braking. The ever-alert foreman, Mr. Shell, pulled me up with the words, I never forgot : "Victor, I thought you served an apprenticeship." There is no excuse for being slovenly in mixing doughs with a machine. Many a time in my forty years as a demonstrator I have seen men "murder" doughs.

Let the brioche dough recover and scale it off into heads for the bun divider or run through an automatic moulder, moulding round twice to improve the final shape and the texture of every roll. In the ordinary bun divider weigh as follows :

Head with 50 divisions, $3\frac{1}{2}$ lb. dough

Head with 36 divisions, $2\frac{1}{2}$ lb. dough

Head with 30 divisions, $1\frac{3}{4}$ lb. dough



Coffee Rolls

When the crescents are rolled into shapes, put them on greased baking sheets and glaze them immediately with egg wash. Proofed in the normal bakehouse temperature or in a dry, warm proofer, these brioche crescents must be egg-washed a second time before baking. The glazing must be done with a broad camel hair brush.

Scottish pastry bakers and confectioners use the right kind of brush for their cookies and other goods. Bake at 400 deg. F., if necessary on a double baking sheet.

Refrigeration gives Improvements

The crescents can be retarded in a refrigerator for 12 hr. and the eating quality and mellowness gain considerably.

The Peregrini crescents are made by the famous bakery firm, Plank, in Vienna, on St. Peregrini's Day every year. They are large crescents of about 6 oz. and made from a dough resembling the mellow milk crescent containing sultanas at the rate of 2½ lb. per qt. of liquor.

Badener and Carlsbader crescents are made more or less on the same lines in Baden, near Vienna, and Carlsbad in former Bohemia, now Czechoslovakia.

The roped crescent, as illustrated, is made from Vienna brioche dough. Two pieces of dough are moulded round, then lengthened, keeping the ends pointed. Then twist like a rope by putting the two strands across each other in the centre and twisting them from the centre with thumbs and index fingers towards one point, reverse and repeat the procedure, and an attractive crescent is the result.

Drahte Kipfl is their name, which only an Austrian is able to understand. American bakers developed the butter twist loaf from it. This roping manipulation will recur quite often in Coronation loaf, Danish Crown, etc.

CHAPTER XI

MACHINE-MOULDED CRESCENTS AND VIENNA ROLLS

The lack of manpower and craftsmen is one of the trade's greatest problems. To bring production to an economical level whereby a decent livelihood and a reasonable measure of comfort for every citizen is assured, manpower and mechanisation are the most urgent needs. To bring every available man and woman within the national efforts supported by intensive mechanisation all along the line, is the outstanding need of the hour and of the next few years.

We British bakers must face the facts, and act accordingly whether we like it or not. We have to increase output per hour. Another less-perturbing factor confronts bakers in Britain—the abolition of night work.

The bakers of Austria had to deal with this problem as far back as 1915. Bakery engineers immediately set to work, designed, and made a range of auxiliary machines and mechanical devices to surmount a lot of obstacles. Mechanisation of century-old traditional manipulations was a big and rapid step in the direction, as outlined by Frederic Windsor Taylor.

The "Taylor System" found its way into British bakeries (and Irish) and will have to be studied by every thinking, progressive baker. Mechanise your bakeries and "Taylorise" your production methods is my advice, the advice of a practical member of the industry who always upholds the ideals of our ancient craft guilds.

One knows that the bakers' output of a large variety of shapes was limited by the supply of highly skilled craftsmen. To-day the situation has worsened and is hardly tenable.

A development in the introduction of auxiliary machines for the preparation of Crescents, Vienna rolls and the introduction of French bread moulders is taking place, as it happened thirty years ago in Austria and other Continental countries where night work was abolished.

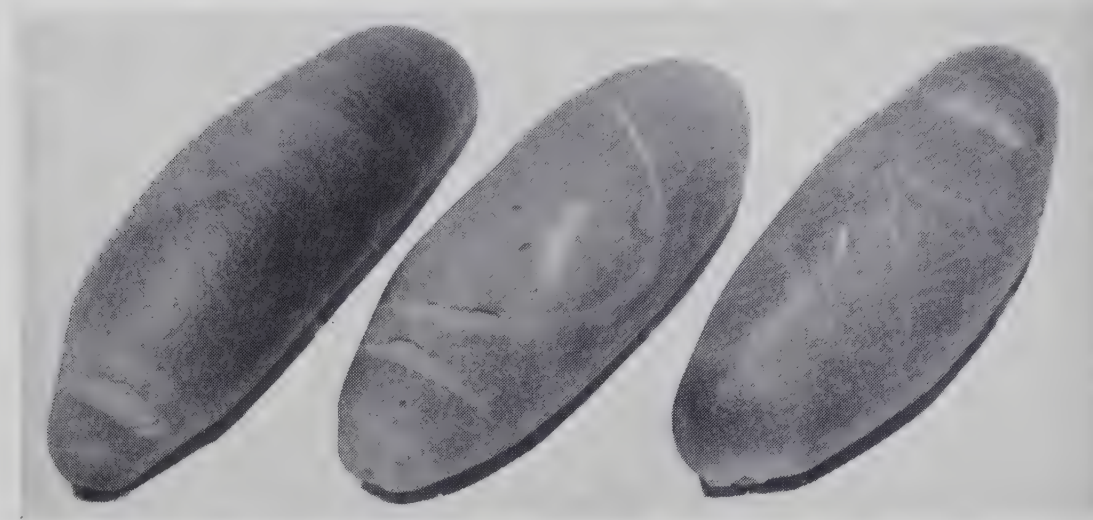
Without hesitation, I have to say that with such moulders perfect and uniform crescents, with four to six symmetrical sections or creases can be made, and the rolls are the pride of every master craftsman. When baked these crescents have an eye appeal and

put the “new look” into the baker’s window or on his counter.

According to the weight of the dough piece, cut by a bun divider or otherwise, crescents up to the length of $8\frac{1}{2}$ in. are moulded at the rate of 2,500 to 3,000 per hour, thus doing the work of ten highly skilled workers.

An “Iron Journeyman” indeed ! The crumb of a machine-moulded crescent is whiter, its texture superior to the hand-made one and, consequently, its palatability. Last, but not least important feature, the volume is definitely larger. The conclusions are obvious when considering the economical factor.

A pyramid of crescents in the window or on the counter invariably creates a stir, and relieves the monotony with sorely tried shoppers. “*Fashion in Bakery*” which I expounded for 15



Machine Made Rolls

years or so, begins to make itself felt. I am motivated in writing these lines to show our fellow members of the industry, profitable production and selling possibilities of high-class and attractive bakery products which are known and appreciated all over the world, made with the minimum of labour, time, and raw materials—sugar and fat.

To Mix the Dough

Disperse the yeast, malt, and sugar in part of the doughing liquor by brisk whisking. Start mixing with balance of water, flour, and yeast liquor. When clear, add the melted fat (or oil) and, when almost finished mixing, dredge the sieved dry salt over the dough mass. Give a thorough kneading to obtain a smooth but not too slack a dough. Dough temperature should not exceed 75 deg. F.

Scale off, mould the heads well, and lay up until ready for cutting out with a bun divider. Weigh and divide sufficient pieces for crescents to fill one or two baking chambers. Put the cut heads

into roll boxes or on trays, usually four pieces into one box, and put the boxes on top of each other. Do not let them stand longer than 10 min. Reverse the boxes to begin crescent-moulding. Start the moulder and feed the dough pieces (non-moulded) through the aperture behind the steel rollers. Give every dough piece a gentle turn before it disappears. This, with the thumb and index finger, assures a perfect smooth close on the end of the crescents. Bend the crescents in horseshoe shapes on greased baking sheets, with the close upwards and put in proofing chamber, filled with little steam to keep the crescents first from getting a skin. Too hot a proofing chamber and too much steam will cause a bursting of the crescent's skin. Temperature for proofing should be 85 to 90 deg. F. Bake at 440 deg. F. Set when under-proof or the crescents will be "blind" and not show the beautiful sections or creases everybody admires so much.

Dry, proofed crescents have to be washed with cold water or flour scald before baking : procedure as for Vienna roll baking.

It is customary amongst Viennese and other continental bakers to wash the baked crescents with "Vienna wash."

Large-Scale Technique

For a continuous work-flow, where large quantities are to be produced, I advise the following procedure as the most practical.

For the first load to fill the available baking chamber, put the crescents straightaway from the moulder on to the baking sheets to proof. All the other crescents should be put in horseshoe shape on cloth-covered boards with the close down. Put the loaded boards on racks to proof. Cover with cloths.

When the first batch is drawn and the crescents removed from the baking sheets, put the dry proofed crescents with the close down on the still hot baking sheets, wash with cold water or flour scald, and fill the oven. In this manner we achieve an enormous saving of time, tinning, and proofing space. Furthermore, racks filled with proofing crescents on boards, can be advantageously rolled into a cool room to allow them to proof slowly.

As an alternative, roll the 80 per cent. proofed crescents and similar rolls into the refrigerator and keep until required. Leave uncovered and finish proofing in the warm bakehouse, for 20 min. before baking. Covering cloths may then be taken off the crescents. Slight skinning of the crescents does not matter, the vital part is protected.

Such slow-proofed crescents, exposed even to cold draughts, are easily handled, and rapid working is made possible. I have used this technique for years in one of the largest bakery establishments of Great Britain and in Vienna more than 40 years ago.

CHAPTER XII

FORMULAE FOR VIENNA ROLLS AND CRESCENTS

Mellow Milk Rolls (Crescents)

(1 gall. dough : *Straight process with soya*)

16 to 17 lb. flour (variable)	6 oz. malt extract
1 qt. full cream milk	1 lb. raw or castor sugar
3 qt. water	2 lb. fat blend ($\frac{2}{3}$ arachide oil + $\frac{1}{3}$ hog lard)
3 oz. soya flour	
7 oz. yeast	4½ oz. salt

Mix a not-too-firm, straight dough by dissolving the yeast, malt, sugar, and soya flour in the milk and the salt separately in the water. When the dough is cleared, add the oil and lard. Dough temperature should be 72 to 74 deg. F. Give two knocks back. This is a very lively dough and produces first-class crescents and coffee rolls, as pistolets, horseshoes, and small fancy rolls of any description.

For large plaits more flour has to be used for tightening up to obtain a very firm dough, and finally a good break of the strands when baked.



Potato Fancy Milk Loaf

Vienna Milk Crescents

(1 gall. dough.)

Make a batter sponge with :

2 qt. water	90 deg. F.	8 oz. yeast
5 lb. flour		8 oz. malt extract
		8 oz. raw or castor sugar

Doughing up : 20 min. after making sponge, mix a dough with :

2 qt. cold milk	2 lb. butter fat or cake margarine
1½ lb. raw or castor sugar	5 oz. salt
	11 lb. flour (variable)
2 lb. groundnut oil (arachide)	

Dissolve the sugar and salt in the milk ; pour into the sponge, clear the mass and start mixing ; as soon as the flour disappears, add the oil and fat. Mix into a smooth, not too firm, dough. Give two knocks back. Proceed as described above.

Vienna Crescents

(1 gall. dough : with soya and boiled mashed potatoes)

Sponge:

2 qt. water	90 deg. F.	10 oz. processed soya flour
4 lb. flour ("Millenium" type)		6 oz. yeast
		6 oz. malt extract
		6 oz. castor or raw sugar

Make smooth batter sponge ; when ripe :

Doughing up :

13 lb. flour (variable)	1½ lb. butter fat
1 qt. milk	1½ lb. groundnut oil (arachide)
1 qt. water	3¼ lb. boiled and mashed potatoes
9 oz. raw or castor sugar	4 oz. salt

Mix in the Vienna manner into a smooth, not too firm, dough. Give two knocks back and brake. Proceed in the usual manner.

Carlsbad Crescents (Uhl-Breunig)

(2 qt.)

11½ lb. flour (variable)	1½ lb. butter
2 qt. full cream milk	4 oz. raw or castor sugar
4 oz. yeast	2 oz. salt

Sponge with half the milk and 2 lb flour, plus yeast and sugar. Let it stand for 20 min. and dough up in the usual manner at 72 deg. F. Let it rise fully once, knock back, and proceed as for crescents.

Yield from above ingredients : 200 Carlsbad crescents.

Viennese Ham Crescents (Uhl-Breunig)

4 $\frac{1}{4}$ lb. flour ("Millenium" type)	1 oz. cane or castor sugar
3 $\frac{1}{2}$ oz. yeast	12 yolks of eggs
Sufficient single cream	1 $\frac{3}{4}$ lb. butter
	$\frac{1}{2}$ oz. salt

Make a straight dough with all the ingredients by dissolving the yeast in sufficient cream, and adding the egg yolks, sugar and salt. Make a bay and mix into a firm paste with the solution and balance of flour. Let it rest for half-an-hour.

Make a filling as follows : Chop parsley finely, add a pinch of white pepper, and add both as a flavouring to chopped ham. Make into small crescents. The dough pieces weigh $\frac{3}{4}$ oz. with the filling. When shaped put on to greased baking sheets, glaze with yolks of eggs ; when dry glaze again, allow to dry and bake at once without proofing any further. This was one of the talked-about specialities of the imperial and royal court bakers, the Uhl-Breunig of Vienna.

Parisian Crescent (Croissants Parisien)

(6 qt. dough)

23 lb. flour	12 oz. yeast
2 qt. water	6 oz. salt
4 qt. milk (full cream)	12 oz. raw or castor sugar
	12 oz. butter

Sponge :

2 qt. water 85 deg. F.	12 oz. yeast
4 lb. flour	4 oz. raw or castor sugar

Make a smooth batter sponge ; beat or slap thoroughly. Dust the surface well with a good layer of flour. Let it lie for about 20 min. As soon as the sponges surface shows distinct breaks, begin the mixing of the dough. The sponge should not reach even one-third of ripeness.

Pour the cold or iced milk into the sponge with the dissolved sugar and salt and clear. Add the flour and mix, adding the butter when the whole is still a lumpy mass. Make a smooth slack dough. Dough temperature should be 70 to 72 deg. F. Let it lie for 1hr., then weigh off into 4, 6 or 8lb. pieces. Pin out as for puff paste, allowing 3 oz. of butter for each pound of dough for rolling in. Cover half the dough sheet with equal pieces of butter, fold the bare part of the dough over the butter covered half, close the sides well and give two half turns. Rest for at least half-an-hour on ice or in the refrigerator. Pin out into a rectangular piece and fold both short ends towards the centre. Brush off any flour and turn over like a book (I call this the book fold). Rest once more in an

ice box or refrigerator for half-an-hour or overnight. Give a final half turn before working off.

If storing in a refrigerator, comply with all precautions to prevent crusting or skinning. There are two ways of working off these croissants, namely : (A) Scale off pieces at 3 lb. 6 oz. for 36 or 2 lb. 13 oz. for 30 piece bun divider. Keep the layers of the paste undisturbed and make a round piece to fit the divider. Cut out and pin out for rolling into crescent shape. (B) Pin out rectangular, $\frac{1}{4}$ in. dough sheets (4 to 6 lb.). With a sharp knife cut into strips $2\frac{1}{2}$ in. wide, being sure to hold the blade of the knife at 45 deg. Take each strip of paste towards the front edge of the table and cut triangular shapes as previously described. The hypotenuse of each triangle will measure $5\frac{1}{2}$ in. and the two other sides (cathetes) $2\frac{1}{2}$ and 5 in. Each strip is treated in this way. Six of these pieces may be put on top of one another until the shaping of the croissants begins. They are put on slightly greased tins and proofed in a humid, not too warm, proofer. Wash with cold water before setting and bake in a sound oven (480 to 500 deg. F.). Steam in the oven is, of course, a great boon. One can obtain good results otherwise, but the croissants, when baked, have to be glazed with Vienna wash.

During the summer the use of chopped ice to obtain the right dough temperature (68 to 72 deg. F.) will be necessary. One-eighth to one-sixth of the total liquid should be substituted with chopped ice which should be put into the sponge before doughing.

Gold Medal Vienna Rolls

(3 gall. dough)

Straight Dough :

3 qt. full cream milk	15 oz. yeast
9 qt. water	12 oz. salt
45 lb. flour (variable)	3 oz. malt extract (liquid)
	6 oz. raw sugar

Dough temperature 72 deg. F.

Bulk fermentation time 2 hr. Knock back twice. Mix in the usual way and dredge finely sieved salt over the dough mass when half-mixed.

With this formula and the Viennese technique of manipulation, proofing, and baking, first prize at annual bakers' exhibition (Agricultural Hall) was won by a client of mine. Exhibits were picked out from ordinary production and goods.

Another Prize Formula (containing ice)

(3 gall. straight dough)

48 lb. flour (variable)	1 lb. 2 oz. yeast
5½ lb. crushed ice	¾ lb. salt
2 qt. cold full cream milk	6 oz. malt extract (liquid)
8 qt. water	6 oz. raw sugar

Dough temperature 70 deg. F.

First knock back 1½ hr. after mixing dough, second knock back after 40 min. Start working off.

Vienna Rolls

(with crushed ice for hot summer work)

(3 gall. dough)

Sponge :

3 qt. water (cold from tap)	15 oz. yeast
7½ lb. flour 80 deg. F.	2¼ oz. salt
	4½ oz. raw sugar

Sponge lies for 15 min.

Doughing up :

5 lb. crushed ice	3 pt. cold water
3 pt. full cream milk (cold)	13½ oz. salt
	37½ lb. flour

Throw the crushed ice into the sponge, add the salt and clear. Now mix into a smooth dough, do not over mix. Fold and break the dough in two portions, place on top of each other, cover up, and let rise for 1 hr. Knock back once, let lie for another hour or so and work off.

This results in first-class luncheon and dinner rolls.

Vienna Rolls

30 lb. flour (variable)	4 oz. sugar
2 gall. water	12 oz. lard
9 oz. yeast	8 oz. dried milk
9 oz. salt	4 oz. malt extract

Make a sponge with 5 qt. water, yeast, malt extract, and 10 lb. of flour. Sponge temperature 75 deg. F.

Let it rise for 25 min., add salt and 1 lb. flour, give a good beating, and let it get quite ripe (about 35 min.)

Doughing up :

Add the remainder of the liquid, cold, in which dried milk and sugar have been dissolved and make with the remaining flour and the lard into an elastic dough. Let rise for 1 hr., knock back, let rise again, and give another knock back. Scale off after 20 min. and proceed in the usual way.

Manchester Bakery : Vienna Bread

(4 hr. straight dough)

140 lb. national flour (1947)	2 lb. salt
7½ gall. water	½ lb. malt extract
2 lb. yeast	1 lb. soya flour
1 lb. fat	1 lb. dried skim milk

Straight dough : Dough temperature 72 deg. F. ; Two cuts back (Punching) and take after 4 hr. fermentation.

The following varieties can be made every day :—

1. Small finger shaped rolls. 2¾ lb. dough per head or press of 36 pieces. Rolls are 2½ in. long, shaped by a crescent or rolls moulder. Proofed on baking sheets close together, to allow for full proof and expansion during baking, will result in bold and soft finger rolls. Oven temperature should be 480 deg. F.
2. Round plain cob-shaped rolls. 4¼ lb. dough for one head or press of 36 pieces. Mould round, proof in boxes, nick with razor blade in the boxes before setting. For dusting boxes, use equal parts of flour and semolina. Oven 460 deg. F., draw with wooden rake.
3. Barm Cakes. Scale off at 4½ lb. for heads or presses of 36 pieces. Mould round, proof in boxes, pin out, proof on baking sheets, and bake at 480 deg. F.
4. Vienna or French Sticks. Scale at 4¼ lb. for head or press of 36 pieces. Mould four pieces into one, let recover and put through a Vienna loaf moulder. Proof on boards between cloths or in boxes. Cut before setting on peel. Oven temperature 430 deg. F. For steam supply : the vertical steam boiler should be showing 75 lb. pressure.

Breakfast and Luncheon Rolls Dough

(2 hr. dough)

1½ gall. water 95 deg. F.	6 oz. malt extract
1¾ lb. yeast	15 lb. flour (strong Canadian)

Make into smooth batter sponge. Temperature 83 deg. F. Take the sponge on the drop and mix.

Dough :

1½ gall. water 95 deg. F.	6 oz. soft pieces sugar
3 lb. lard	¾ lb. salt

Make into a good dough, let rise, and knock back. After recovery, work off.

American Vienna Rolls

(2 hr. straight dough)

50 lb. flour (blend of strong and softer kind, propor- tion 4 : 1)	12 oz. salt 12 oz. malt extract 2½ lb. fat 5 lb. sweetened condensed milk
2½ gall. water	
1¼ lb. yeast	

Disperse the yeast and malt extract in part of the water. Put the salt, fat, condensed milk, and balance of water in the dough mixer, start it, and add the flour. Finally work in the yeast liquid and mix into a good smooth dough for 15 to 20 min. Dough temperature should be 80 deg. F. Give two knocks back during 2 hr. from mixing the dough. Scale off in $\frac{1}{4}$ hr.

English Vienna Bread Dough with Ferment

(3 hr. dough)

Ferment :

1½ gall. water	} 100 deg. F.	6 oz. malt extract
1½ gall. full cream milk		6 lb. flour
13½ oz. yeast		(strong Canadian)

Make into a good ferment, whisking vigorously. Cover up and take when it begins to drop.

Dough :

Add ¾ lb. raw cane sugar	12 oz. salt
1½ lb. of fats (lard and butter)	42 lb. flour (⅓ Canadian, ⅓ Hungarian, ⅓ top grade English)

Make into a good dough at 78 deg. F. Knock back twice, begin to work off 3 hr. after setting the ferment.

Straight Vienna Bread and Roll Dough

140 lb. flour	2 lb. 5 oz. salt
92½ lb. (9 gall. 1 qt.) water	¾ lb. malt extract
3 lb. yeast	2 lb. thick emulsion (glyceryl mono stearate 5 : 1)

Dissolve the malt extract in $\frac{1}{2}$ gall. water at 90 deg. F., add $\frac{1}{2}$ gall. cold water and the yeast. Whisk well and add to the balance of the doughing water which should be in the mixing bowl (on one side of the flour). Start the machine, add the emulsion and dredge the finely sieved salt all over the dough when the last particle of flour disappears : do not over mix. The dough temperature should be 80 deg. F.

Let the dough lie for 1 hr., then give a good knock back by cutting 20 to 30 lb. pieces off, folding and punching them well. Throw the dough lumps on top of each other. Cover up and begin scaling off in $\frac{1}{2}$ hr.

Proceed in the usual way.

The loaves and rolls should go to the oven in $2\frac{3}{4}$ to 3 hr. from the start of mixing the dough. Two skilled men should be able to cope comfortably making 1 lb. and $\frac{1}{2}$ lb. Every shape and size, loaf and roll can be perfect if it is properly handled and necessary attention given.

Shapes are :—French sticks, Vienna, Danish and Swiss couronnes, fendus, American butter twists, cobs, batons, etc.

They should have excellent volume, golden crisp crust, and a nice crumb.

English Vienna Bread Dough

(Sponge and dough 3 hr.)

Sponge :

1 $\frac{1}{2}$ gall. water	12 oz. malt extract
12 oz. yeast	15 lb. flour (variable)

Make into smooth batter sponge, at 83 deg. F., ready in 45 min.

Dough :

1 $\frac{1}{2}$ gall. full cream milk (cold)	$\frac{3}{4}$ oz. lard
3 oz. raw cane sugar	$\frac{3}{4}$ lb. salt

Mix into a good dough at 74 deg. F. Knock back first time after 1 hr., second knock back in $\frac{3}{4}$ hr., and work off in $\frac{1}{2}$ hr.

English Vienna Bread Dough

(5 hr. dough) Somerset style.

Sponge :

1 $\frac{1}{2}$ gall. water	100 deg. F.	6 oz. yeast
15 lb. flour		3 oz. raw cane sugar

Make into a smooth batter sponge and let it stand for 1 $\frac{1}{2}$ hr.

Dough :

Add 1 $\frac{1}{2}$ gall. water	75 deg. F.	3 oz. raw cane sugar
12 oz. dried skim milk		4 $\frac{1}{2}$ oz. salt

Mix into a good dough, let it lie for 1 $\frac{1}{2}$ hr., knock back by folding and braking, give another hour's fermentation, knock back second time, let recover, then scale off and proceed as usual.

Straight English Vienna Bread Dough

(2½ hr. dough)

3 gall. water	100 deg. F.	1¾ lb. yeast
51 lb. flour	64 deg. F.	12 oz. salt
6 oz. raw cane sugar		

Mix into a good dough and allow to stand for 1 hr. Knock back by folding and braking, let rest for ¾ hr., knock back again, then scale off and proceed after 20 min.

Jewish Bread Dough

(4 gall. dough)

Ingredients :

70 lb. flour	1 lb. butter
40 lb. water	2 qt. eggs
2 lb. yeast	2 oz. mineral improver
1¼ lb. salt	2 lb. sugar (soft lumps) or raw cane
½ lb. malt extract	
1 lb. groundnut oil (arachide)	2 oz. zest of lemon

Method : Half sponge:

2 gall. water	90 deg. F.	8 oz. malt extract
20 lb. flour		2 lb. yeast

Make into a smooth batter sponge, slap well and dust surface with flour ; let rise in sheltered place for 1 hr., then mix into dough.

Dough :

2 gall. water	2 lb. raw cane sugar
2 qt. eggs	2¼ lb. salt
2 oz. zest of lemon	

Add these to the sponge, clear it, and add the balance of the flour, starting the machine to mix the dough. Dissolve the improver in a little water and incorporate it into the dough mass. When all the flour has disappeared, add the oil and the softened butter. Mix into a firm dough at 72 deg. F. Knock back in 1¼ hr., scale off 1 hr. later, hand up, let recover, and make chollars, bulkas, one-piece cottages, baches, and plaits of different weights.

Protect the loaves from draughts, wash before setting, either with eggs or water, and dredge with maw or poppy seeds. Bake in oven of 390 to 400 deg. F., bake well. Steam lightly. Ovens with horizontal sole or drawplate ovens will bake very good loaves.

Smaller loaves or rolls from the above dough should be washed with cold water before setting and after with Vienna wash.

The use of arachide oil is advisable and economical. I prefer it for this kind of work to any other fat, as I had years of experience with this type of oil of French origin in Vienna during the mid-twenties.

Siebenbuerger Bread (Now Transylvania in Roumania)

(3 gall. dough)

Sponge :

7½ pt. water 85 deg. F. 1¼ lb. leaven from white flour.
6 oz. yeast 7½ lb. flour

Disperse the yeast and leaven in part of the water, add the flour and mix into a smooth batter sponge. When ripe and on the point of dropping, dough up with :

15 qt. 1½ pt. water 1 lb. salt
16½ lb. finely grated raw potatoes 48 lb. flour (variable)

Dough temperature : 78 deg. F.

Pour the doughing water into the sponge or *vice versa*, add raw potatoes and salt, and clear. Mix with the flour to a firm dough. Let it rise once, give a good knock back by folding large pieces of dough, and punch well. Let it recover for 20 min. or so, scale off into 1 or 2 lb. pieces, hand up, and, when recovered, mould round. Proof the loaves with close upwards on to boards covered with cloths or, as is the custom in Hungary, on to straw or cane round shallow baskets of suitable size. After a few minutes flatten the loaves gently with the heel of the hand. Allow full proof.

When setting, turn over on to a broad Vienna peel and wash with cold water or flour scald. Cut once across with sharp blade and set into steam-filled baking chamber.

When half-baked draw the loaves, wash with cold water, and put the loaves back into oven in reversed position, or transfer into a slightly cooler oven. With a staggered baking chamber, this procedure is a very easy and pleasant job. Two men can work quickly with a great saving of time. After drawing the loaves wash again with cold water and stack on racks.

This loaf keeps moist a good time.

Spanish Vienna Bread

280 lb. flour 42 lb. old dough
148½ lb. water 2 lb. yeast
 3½ lb. salt

Make a sponge with 5 gall. water, yeast, and 40 lb. of flour. Let it get ripe, and when there are signs of it dropping add the balance of the liquid and salt and mix into a medium dough with

the old dough which previously was soaked in the doughing water. Let it ferment, give two knocks back, recover, and work off as for Vienna Bread.

Vienna Bread and Rolls (Home baking)

4 lb. national flour	1 oz. salt
1 qt. water (half milk or	2 oz. fat and/or $\frac{1}{2}$ oz. of
2 oz. milk powder if	lecithin
available)	1 oz. sugar
	2 oz. yeast

Sieve the flour (plain national or white).

Put into basin 1 pt. lukewarm (90 deg. F.) water, crumble the yeast into it, add a pinch of sugar, and whisk for a while to disperse the yeast. Add 20 oz. flour and beat this with the hand, a spatula or spoon, to a smooth batter. Dust the surface of this "sponge" with a layer of flour and let it rise in a warm place until air bubbles appear, break, and the sponge begins to sink or drop in the middle.

Pour on to this "sponge" 1 pt. cold milk, water, or water in which the milk powder was dissolved (one-sixth of this liquid can be iced water). Add the remaining sugar and commence to make the dough with the remainder of the flour. Keep back about 4 to 6 oz. of flour to prevent any tendency of a too light dough (not all flours absorb the same quantity of water). After all the flour necessary for the dough has disappeared, add the fat or the lecithin—or the fat into which the lecithin has been well blended. Finish by making the whole mass into a not-too-firm dough.

I have to leave this to your judgment, therefore my advice to keep back 4 to 6 oz. from the total quantity of the flour in case you do not need it. The finished dough should be gently braked with the forearm and folded a few times to become quite smooth and dry (silky). Use a little flour for dusting the board to prevent sticking.

Cover the dough up with a cloth and let rise for 1 hr. or so. When well risen (signs of cracks appear on the surface), take the dough from the basin, put on board and repeat the folding manipulation with your forearm. Put back into basin, cover up, and let rise for about 20 min.

Now the dough will be ready for weighing into suitable sizes, say, 8 to 16 oz. for tin loaves, or 1 to 3 oz. for smaller rolls, such as round ones, bridge rolls (shuttle-shaped) or finger rolls, twists, knots, etc. Put these shapes (a) on to a cloth-covered board, slightly dusted with flour and cover up, letting the rolls rise, and before baking put them on heated greased or floured baking sheets ; or (b) put the rolls etc., on greased warmed baking sheets to rise ;

or (c) put the loaves into warmed and greased baking tins, oblong, oval, or square. Let them rise and bake in an oven of about 430 deg. F. Before putting into the oven or stove, wash the surface of loaves or rolls slightly with cold water.

Place at the back of the baking chamber a small tin, etc., filled with ashes, 2 min. before putting in the goods ; then place the bread into the chamber.

Bake for 15 min. (small) and 20/25/30 min. the larger shapes, until well baked.

The fat and sugar can be increased by 2 oz. if a sweeter article is required.

Vienna Patent Rolls (K. Schamburek—Vienna) (Short Finger Shaped)

2 $\frac{1}{4}$ lb. kaiser rolls dough	3 oz. raw cane sugar
1 qt. full cream milk	5 oz. groundnut oil
85 deg. F.	6 oz. boiled and mashed potatoes
1 $\frac{1}{2}$ oz. yeast	1 oz. salt
$\frac{1}{2}$ oz. malt extract	4 $\frac{1}{2}$ lb. flour (variable)

Dissolve the yeast, malt, and sugar in milk (lukewarm). Break up the kaiser roll dough which may be just mixed and must in no circumstances be older than 1 hr. Work the flour gradually into it then the oil and salt. Mix into a medium dough (not too firm ; same consistency as mellow milk roll dough). Let it come up once, knock back, brake, let it recover, weigh off, and mould round. Shuffle together, observing the described Viennese procedure at table, and when recovered, mould into short baton shapes, about 3 in. long, with slightly tapered ends and 1 in. in diameter. They should be less tapered than the English bridge roll.

Bake in steam at 410 deg. F. and if baked on the sole of the oven these rolls possess an exquisite flavour.

Rich Fancy Milk Bread Dough

210 lb. flour	6 oz. malt extract
120 lb. (12 gall.) water	6 lb. sugar (Tates, lumps
(variable)	preferably)
5 lb. yeast	6 lb. fat
4 $\frac{1}{2}$ lb. salt	2 qt. eggs
	2 $\frac{1}{4}$ lb. milk (powdered)

Make a smooth batter sponge with 6 gall. water at 90 deg. F., 60 lb. flour, 12 oz. malt extract, and 5 lb. of yeast. When ripe (1 hr.) add 6 gall. water in which the dried milk and sugar have been dissolved, add the eggs and start the machine. When the dough begins to clear and while the machine is running add the

softened fat or oil, dredging the sieved salt over the doughs.

Mix well for 15 to 20 min. with a final dough temperature of 74 deg. F. Cover up and let ferment for $1\frac{1}{4}$ hr., knock back by folding and punching 20 or 30 lb. lumps of dough. Let lie for another 40 min. well covered. The "covering up" can be dispensed with if air conditioning plant is installed. Scale off at suitable weights for fancy cottages, super texture coronation tin loaves, plaits, chollas, baches, crescents, bulkas, and any fancy shape desired.

Hand up, allow to recover, and make into final shapes. Proof, wash with Vienna wash, or eggs, as the case may be, and dredge certain shapes with maw seeds (the blue kind) and bake in steam-filled oven.

Yield : 118 pieces at $2\frac{1}{4}$ lb., 106 at 1 lb. 2 oz.

It does happen that quite a good number of used lemons are often put in the dustbins : that should not be so. A girl can easily remove the zest and when finely chopped and added at the rate of 2 oz. per gallon of liquid improve immensely the eating quality of the baked product.

The temperature of the oven should not be above 400 deg. F. Groundnut oil is the oil for these productions ; needless to say, it goes very well with butter in any proportion without damaging the fascinating flavour and aroma of the goods.

This formula is, of course, intended for the time when we British bakers are in a position to use it, which I hope will be in our time.

Viennese Butter Twists or Coronation Loaves (from two pieces)

24 lb. flour (variable)	6 oz. malt extract
3 qt. water	10 oz. sugar
3 qt. milk	12 oz. fat
10 oz. yeast	(12 oz. dried milk if no fresh
6 oz. salt	milk is used)

Make a half sponge, to 80 deg. F., with 3 qt. water, the yeast, malt extract, and 7 lb. flour. Let it rise until air bubbles appear and break. Mix into a firm dough and knock back twice : dough temperature 72 deg. F.

Scale off for 1 lb. loaves, $\frac{1}{2}$ lb. pieces, hand up and, when recovered, mould firmly into 6 in. baton shapes ; lay up. Put two baton pieces across each other at the centre and turn with thumb and middle finger of both hands against one another making a rope-like shape. Put them into narrow tins, proof, and bake.

Immediately after drawing, brush the top of the loaves with

butter. This is a very attractive, delicious and eating loaf and is a good toaster and seller.

Vienna Milk Bread and Rolls

32 lb. flour (about)	9 oz. salt
1 gall. water	9 oz. malt extract
1 gall. milk	3 lb. clarified butter and lard
1 $\frac{1}{4}$ lb. yeast	3 $\frac{1}{2}$ lb. sugar

Make a sponge, to a temperature of 75 deg. F., with 1 gall. water, yeast, malt extract, and 10 lb. flour. Let it rise for 20 min.



Vienna Milk Loaf

To dough up, add 1 gall. milk, quite cold, all the other ingredients and make into an elastic dough. Knock back twice within 3 hr. Scale off and proceed in the usual way.

Milk and Honey Vienna Cobs

28 lb. kaiser rolls dough	1 lb. 2 oz. honey
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When kaiser dough is half mixed, add the honey and make into a medium dough, rather firm than slack. Let the dough come up fully then knock back. Allow to recover and scale off, when ready, into 8 oz. or 1 lb. pieces. Hand up, allow to recover, mould round, put on to greased baking sheets, and after 5 min. or so press gently down, but not as much as for barm bracks or Welsh hearth loaves. Proof in humid warm proofer and give full proof. Before baking,

wash them with cold water or spray and cut a diamond or sunrays pattern.

This is a very attractive loaf and commands a very good sale.

Vienna Potato Milk Bread

(1 gall. straight dough)

20 lb. flour (variable)	4½ oz. malt extract
2 qt. milk	3 lb. lard and butter
2 qt. water	3 lb. sugar
1 lb. yeast	10 whole eggs
4½ oz. salt	4 oz. vanilla sugar,
4 to 6 lb. sultanas	

Boil 18 lb. potatoes ; peel, and mash them and add to above ingredients.

Mix into a firm dough at 74 deg. F. Knock back three times and weigh off immediately after the third knock back. Proof 1 or 2 lb. cobs on cloth-covered boards with the close up. Press down with palm of hand in centre after recovery ; proof in dry warmth. Wash with cold water before setting and stab each loaf five times with a knitting needle. Bake in steam on the oven sole at 400 deg. F.

When half-baked, shift the loaves from front to back of oven chamber and those which were on the left side to the right. Or finish baking in another (cooler) oven chamber. Very nice bloomers, or tin loaves may be baked in similar manner.

These potato milk breads keep fresh a few days and are greatly favoured in Austria for the week-end, where no bread or rolls are baked during Sunday night.

Vienna Milk Bread with Mashed Potatoes

(1 gall. half-sponge and dough)

1 gall. water	4 oz. salt
8 oz. dried milk	8 eggs
8 oz. yeast	2 lb. fat (cake margarine, butter
14 oz. moist raw cane	fat, etc.)
sugar or lumps	4 lb. boiled and mashed potatoes
2 oz. malt flour	21 lb. flour (variable)

Half Sponge : Whisk milk powder in two quarts of water at 95 deg. F. Disperse the yeast, malt flour, 2 oz. of sugar and mashed potatoes in it, and make with sufficient flour (4 to 5 lb.) into a smooth batter sponge. When on the point of dropping, add the balance of the doughing water (cold), the remainder of the sugar and the salt, and clear the lot by giving the mass a good slapping.

Add the melted or softened fat and the remainder of the flour (16 lb). Mix into a firm dough.

The mashed potatoes must be pressed through a sieve before using, otherwise pieces of potatoes will cause dark specks on the crust of the baked product. Knock the dough back twice before scaling. Dough temperature should not be above 72 deg. F. All shapes should be given full proof. Wash over with cold water before baking and when baked with Vienna wash.

For fruited potato milk bread use 1½ lb. of sultanas to 6 lb. of dough.

The loaves may be baked in tins, on baking sheets, or direct on the oven sole. The last named is the customary way in Central European Countries. Of course, the use of steam is of the greatest importance. Oven temperature should not be above 430 deg. F. and the time from setting sponge to scaling off 2½ hr. : Proofing, 30 min.

Vienna National Fermented Cake (Guglhupf)

8 lb. flour	variable	1½ lb. fine castor sugar
4 pt. soya milk		1¾ pt. eggs
7 oz. yeast		2 lb. butter or cake margarine
1½ oz. salt		2 lb. sultanas (or more)
Vanilla essence and rum (2 spoonfuls)		

Half Sponge :

2 pt. soya milk	100 deg. F.	1 oz. sugar
7 oz. yeast		2 lb. national flour

Make into a smooth batter sponge, dust surface with a ¼ in. layer of flour, and let the sponge get ripe. Meanwhile, cream up the butter or margarine and sugar, gradually add the eggs, salt, vanilla essence, and a good dash of rum. When the sponge shows signs of dropping pour into it the balance of 2 pt. of milk (90 deg. F.), clear the mass, add the creamed sugar batter, and mix into a slack dough. If made in a machine, let it run on second speed until quite smooth and glossy on the surface and air bubbles will make their appearance.

Prepare round Sand Cake (Berlin), Prima Donna, or Turk Head tins (with funnel in centre) by greasing the shapes well and coating the sides and the funnel with dry, finely-ground Vienna bread crumbs or cake crumbs. Fill the shapes immediately after mixing the dough just a fraction more than half way. Fully proof for about 40 min. in a warm but dry place.

When ready for the oven, put the shapes (18 oz. or larger) on hot baking sheets and bake for 50 min. in oven of 410 deg. F. When drawn, turn the hot cakes upside down on to wires or boards ;

a gentle knock to ease the slipping out of the shapes will not do any harm provided the cakes are thoroughly baked. When still hot, sieve vanilla icing sugar on the top and sides of the cake. They are very attractive, command a good sale, keep fresh a good time, and are very nice to eat. They make an intriguing change to the over sweet ordinary cakes for the fastidious customer.

Vienna Soya Milk Bread

1 gall. water	1 oz. malt extract
$\frac{1}{2}$ lb. yeast	8 oz. fat
4 $\frac{1}{2}$ oz. salt	8 oz. sugar
12 oz. soya flour (processed)	17 lb. top grade flour (about)

Dissolve the soya flour in water by whisking.

Straight Dough : Break up the yeast in the soya water, and dissolve the malt extract and sugar in it. Make a bay with flour, pour liquor into it, and begin to make the dough. When all the flour disappears, the fat is added and finally the salt dredged over the dough, which has to be mixed thoroughly. Let the dough rise twice, giving it two knocks back. Scale off 10 min. after the second knock back, at weights conforming with the law. Shapes that can be made are :—Tin, shuttle-shaped loaves, chollas, etc.

Temperature of dough should be 76 deg. F. The time taken about 2 hr. to scaling off. Proof well and bake in steam at 430 deg. F.

Sponge Dough

Sponge :

2 qt. water 95 deg. F.	1 oz. malt extract, +1 oz. sugar
7 oz. yeast	12 oz. soya flour
4 $\frac{1}{2}$ lb. flour	

Dissolve the malt extract and sugar in the water, whisk in the soya flour, break up the yeast in liquor, and make with flour a smooth batter sponge. Dust the surface of the sponge with $\frac{1}{2}$ in. layer of flour and let rest for 20 min. To make the dough, add 2 qt. water at 75 deg. F. and 7 oz. sugar. Clear the sponge and commence making the dough. After flour has disappeared add the fat and finally the salt, and make with balance of flour a medium, not too tight, dough. Let rise once, knock back once and, before scaling off, a second time.

Proceed as described above.

Vienna Soya Milk Bread

(3 gall. dough)

50 lb. national flour (variable)	1½ lb. yeast 13½ oz. salt
30 lb. soya milk	12 oz. sugar
6 oz. malt extract	6 oz. fat

Disperse the yeast in part of the milk, add the malt extract and sugar, and commence mixing the dough. When the dough begins to form (flour has disappeared), add the softened fat, and dredge the salt over surface of the dough. Mix into a smooth but not-too-firm dough. Bakers seem to err in this respect, therefore milk breads eat dry and do not command the sale as they do in the U.S.A. and in Continental countries.

Give the dough, which should be at 75 deg. F., two knock backs within 2 hr. from dough-making. Scale off, hand up, shape, proof, and bake at 430 deg. F. in steam, or egg glaze and have the damper drawn.

Beautiful bloomers, tin loaves, plaits, chollas, one-piece cottages, etc. may be made *ad lib.*

Soya Milk Fancy Rolls

10 lb. ordinary ripe bread dough	4½ oz. salt 6 oz. sugar
10 lb. soya milk 85 deg. F.	2 oz. malt extract 10 oz. fat, (cake margarine)
½ lb. yeast	16 lb. flour (variable)

Pull the ripe bread dough into small pieces and soak it in a portion of the milk. Work the pieces into a smooth batter, add all the other ingredients (after dissolving the yeast in balance of milk) into a not-too-stiff dough. Give two knocks back, scale off 10 min. after second, hand up, shape, proof, and bake in the usual way.

Hints for large size Plaits, etc.

For a larger number of plaits, twists, chollars, etc. made from a milk bread or brioche (Viennese type) it is advisable to make separate special doughs. To one sack of flour (280 lb.) 15 gall. (150 lb.) of liquid is the suitable proportion. A firm dough is imperative. Quite considerable quantities of eggs go into brioche doughs; for this additional liquid, the corresponding quantity of flour has to be allowed. The amount of yeast depends upon the quantities of fats and sugar used and the fermentation method employed.

For straight doughs I prefer 6 oz. fast yeast to 1 qt. liquid; for sponge doughs 4½ oz. to 1 qt. liquid (plus eggs).

CHAPTER XIII

FRENCH BREAD AND ROLLS

French Long Loaves

(Straight 6-7 hr. dough)

40 lb. flour (blend of equal parts of Hungarian, Canadian, and top grade English)	10 qt. cold water 8 oz. yeast 7 oz. salt (hard crystals) 2 oz. malt extract
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Dissolve the yeast, malt extract, and the salt separately in parts of the doughing water and mix into a good elastic dough. When the correct consistency is obtained, nip off 10 lb. dough pieces with the hands and spreading them on top of each other. Travelling twice the whole length of the trough, to and fro, is a quick and efficient procedure : an efficient craftsman will not dream of using a knife. Pin on a board or let it lie in a lined, suitable basket or greased container for 6 or 7 hr. Knock back and fold 20 lb. dough pieces on the table. The further manipulations are known to every maker of French bread. Dough temperature, 68 deg. F.

Needless to say, machine-made doughs give first-rate results. Seven min. mixing is quite sufficient.

Use the same formula for different bulk fermentation times with these yeast variations :—

4 hr. dough	12 oz. yeast
3 hr. dough	1 lb. yeast
2 hr. dough	1½ lb. yeast

Rapid French Dough Method

14 lb. flour	4 oz. salt
1 gall. water	1½ oz. invert sugar
12 oz. yeast	1 oz. lecithin emulsion (1 : 2)

Dissolve the yeast, sugar, and lecithin emulsion in part of the water and the salt in the rest of it. Shake the liquor and flour together so that the doughy mass just holds together. This manipulation will not take longer than 3 min. Let rest under cover for ½ hr., then fold and brake well. Let rest another 10 min. and weigh off for large French loaves and for small round and shuttle-shaped rolls. Hand up for the large French sticks lightly into oval

shapes, let recover, and mould firmly into sticks of 8 oz., 1 lb. or 1½ lb. Proof upside down between cloths on cloth-covered boards. Protect from draught, when full proof, turn over, cut and set. Dough temperature 80 deg. F. The rolls, large and small, will be out of the oven in 1¾ hr., from the time of mixing the dough.

I have demonstrated this rapid method in many bakeries in Great Britain and Ireland since 1930. Amongst them in the early 'thirties to Messrs. Mackman and J. Irons and to Mr. E. Bennion at the Borough Polytechnic, National Bakery School.

French Bread and Rolls Dough

(Leaven fermented—5 hr.)

5 lb. strong flour	5 lb. water 80 deg. F.
5 lb. of old dough (6 to 24 hr. old)	1 oz. raw sugar

Soak the pieces of old dough in the water, add the sugar and flour, and mix into a smooth batter sponge. There should not be



The Galette

any lumps of the old dough discernible. Rest the sponge in a warm place and keep it covered with a layer of flour. In about 2½ hr. it will begin to drop, showing the well-known triangular sign in the centre of its surface.

Doughing up :

8 lb. flour	5 lb. (2 qt.) water
4 oz. salt	

Pour the doughing water into the sponge and stir well until clear ; mix with the flour into a slack but well made elastic dough. At the beginning of mixing, when every trace of flour has disappeared, dredge the sieved salt over the dough's surface during mixing.



Coronation or Britannia Loaf

Let it lie in a warm place to proof. Knock back three times within $2\frac{1}{2}$ hr. Let the dough recover after third knock back and weigh off for long loaves or rolls.

Hand up oval and, when recovered, mould into long loaves, couronnes, galettes and round or shuttle-shaped rolls. Proof between cloths the large long loaves and the other shapes on cloth-covered boards, upside down with close up. Fifteen minutes before baking expose these goods to a current of cold air.

French Bread and Rolls

(With old dough and soya flour)

Sponge :

9 lb. old dough (18 hr.)	$1\frac{3}{4}$ lb. crude (unprocessed)
18 lb. flour	soya flour
8 lb. water 90 deg. F.	

Make into a smooth homogeneous mass and let it ferment for 2 to $2\frac{1}{2}$ hr. For dough add :

16 lb. tap water	18 lb. flour
12 oz. salt	

Mix into a good dough, knock back three times. The first knock back should be 1 hr. after dough making, second 35 min. after first, and the third knock back when well recovered. Weigh and work off in the usual way. The loaves should be on the boards to proof 5 hr. after making the sponge. Proofing time 40 min.; baking time 25 to 30 min. in a sound oven.

French Rolls

(Straight $2\frac{1}{2}$ hr. dough)

28 lb. flour (or less)	12 oz. yeast
2 gall. water	10 oz. salt
3 oz. malt extract	

Make into an elastic dough at 72 deg. F. Give three knocks back within $2\frac{1}{2}$ hr., scale off, and proceed in the usual way.

(The addition of 8 lb. of old dough, 12 to 18 hr., will improve the flavour and keeping properties.) Varieties for longer-period doughs : For 3 hr. dough 10 oz. yeast ; for 4 hr. dough $7\frac{1}{2}$ oz. yeast ; for 5 hr. dough 6 oz. yeast ; for 6 hr. dough 5 oz. yeast.

CHAPTER XIV

FLOUR BLENDS

It is quite interesting for the reader and student to know what kind of flours bakers in different parts of the country were using during the past thirty years. It will be a few years before we are as fortunate as we were before 1939.

1. A noted north London firm with a large number of shops made very large but rather, dry-eating cobs and sticks from :
75 per cent. Leviathan and
25 per cent. northern King.
2. Another London firm in the south-west used :
50 per cent. Manitoba and
50 per cent. super whites of King's at Uxbridge.
They made large rolls with a 2 hr. dough.
3. In the same district a baker made most beautiful rolls from :
50 per cent. Fort Garrick and
50 per cent. Silver Seal (Cranfield's, Ipswich).
6 hr. dough.
4. A bakery in Harrogate made from a 4 hr. dough first-class rolls and Vienna loaves from :
100 per cent. national choice using 3.3 parts of liquor to 5 parts of flour.
5. An Isle of Wight firm developed a large Vienna trade with :
50 per cent. Golden Sun (Cardiff miller) and
50 per cent. Leviathan
6. A Clacton firm produced fine Vienna bread with 100 per cent. Anglo-Hungarian (Cranfields). Dough mix proportions :
8 parts of flour to 5 parts of liquor.
7. A Wrexham bakery reputed for its Vienna bread and rolls used for a $2\frac{1}{2}$ hr. dough at 70 deg. F. 100 per cent. "Millenium" flour.
8. A Lancashire (Oldham) baker made good Vienna lines with :
50 per cent. Leviathan and
50 per cent. 5 G's.
9. A noted Margate baker did the same with :
50 per cent. Manitoba and
50 per cent. Golden Cream.

10. At Maidstone a bakery firm used for its Vienna bread :
50 per cent. "Five Roses" and
50 per cent. "Golden Seal."
11. A north-western firm made fine rolls with :
100 per cent. Paul's Best.
12. A Hertfordshire baker using a 100 per cent. sponge (all the liquor) did it with 90 per cent. Anglo-Hungarian (Cranfield's) and 10 per cent. Canadian.

The largest output of Vienna bread and rolls in London was made by using a blend of equal proportions of Hungarian or Vienna flour, Canadian or Minnesota, and top grades of English mills.

The surviving and budding craftsmen have to make the best of breads with flours which are not so good as those half-a-century ago. To make these twelve examples of flour blends more interesting I shall give data from which my readers may choose, try and, no doubt, benefit.

No. 3 South West London Bakery

(5 gall. 6 hr. straight dough)

80 lb. flour (50 per cent.	1½ lb. salt
Fort Garrick, 50 per	5 oz. crystallised malt extract
cent. Silver Seal)	12 oz. sugar
5 gall. water	1½ lb. fat (vegetable)
	1 lb. yeast

Knock back twice. Let the dough come up fully before each knock back and before working off. Dough temperature 72 deg. F.

No. 4 Harrogate Bakery

(3¼ gall. 4 hr. straight dough)

50 lb. flour	10 oz. yeast
10 qt. water	13 oz. salt
3 qt. full cream milk	4 oz. malt extract
	3 oz. sugar

Dough temperature 74 to 76 deg. F. A.1 results ; Oven with swing -in oven door and flat oven sole. Bake at 400 deg.F.

No. 5 Isle of Wight Bakery

(3½ hr. dough)

50 lb. flour	10 oz. yeast (fast)
11 qt. water 90 deg. F.	9 oz. salt
1 qt. full cream milk	3 oz. malt extract
	3 oz. sugar

Bakery temperature 60 deg. F.

First knock back $2\frac{1}{4}$ hr. after dough mixing. Dough temperature 77 deg. F., second knock back in 1 hr. ; scale off in 20 min. All rolls and loaves were on boards for proofing in 5 hr.

No. 6 Clacton-on-Sea Bakery

(3 hr. dough)

50 lb. flour	54 deg. F.	20 oz. yeast
3 gall. water	85 deg. F.	12 oz. salt
12 lb stale dough	(9 hr. old)	4 oz. malt flour

Dough temperature 64 deg. F. First knock back $1\frac{1}{2}$ hr. after mixing dough ; second knock back $1\frac{1}{4}$ hr. later, worked off in $\frac{1}{2}$ hr. First-class results.

No. 7 Wrexham Bakery

(4 gall. dough : $2\frac{1}{2}$ hr.)

60 lb. flour	80 deg. F.	$1\frac{1}{4}$ lb. yeast (fast)
$3\frac{1}{2}$ gall. water	70 deg. F.	1 lb. 2 oz. salt
$\frac{1}{2}$ gall. full cream milk	70 deg. F.	6 oz. soft pieces sugar
		3 oz. malt extract

Method : Quarter Sponge :

$\frac{1}{2}$ gall. water	6 oz. of soft pieces sugar
$\frac{1}{2}$ gall. full cream milk	3 oz. malt extract
$1\frac{1}{4}$ lb. yeast (fast)	12 lb. flour

Made into a smooth batter sponge ; when ripe, made into good dough with balance of flour, salt being dredged over cleared dough during mixing. Knocked back twice and ready for scaling off $2\frac{1}{2}$ hr. from time of setting sponge, oven 400 deg. F.

No. 8 Lancashire Bakery

(3 gall. 2 hr straight dough)

48 lb. flour	1 lb. salt
2 gall. water	3 oz. malt extract
1 gall. full cream milk	4 oz. soft pieces sugar
$1\frac{1}{4}$ lb. yeast (fast)	$\frac{3}{4}$ lb. lard

Two knocks back ; scaled off immediately after second knock back. Dough temperature 72 deg. F. First-rate result.

No. 9 Margate Bakery

(2½ gall. 6 hr straight dough)

40 lb. flour	10 oz. salt
2½ gall. water	2½ oz. malt extract
7 oz. yeast	10 oz. dried skim milk

Dough temperature 70 deg. F., three knocks back. Excellent results.

No. 12 Hertfordshire Bakery

Whole sponge process with lecithin emulsion :

(15 qt. dough)

65 lb. flour	64 deg. F.	4 oz. malt extract
15 qt. water		3 oz. lecithin
1¼ lb. yeast		1 lb. 6 oz. lard
17 oz. salt		7½ oz. dried milk
6 lb. old dough		

Sponge :

32½ lb. flour	64 deg. F.	12 qt. water
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Well beaten in dough machine with a starter liquor consisting of 3 qt. cold water, 1¼ lb. yeast and 4 oz. malt extract well whisked together, and standing for 10 min. This sponge fermented for 1 hr. at 70 deg. F. and rose right to the top of the machine. At this stage 17 oz. salt and half the lecithin emulsion (1½ oz.) and 5lb. flour were added. The sponge was thoroughly stirred by setting the machine in motion.

This salted sponge was allowed to ferment for 50 min. All the other ingredients and balance of flour were then added and mixed into a good dough for 15 min., then left in a cool place. Dough temperature was 74 deg. F. Knocked back once, when recovered scaled and worked off. Result : first-class in every respect.

Particular and outstanding features were the thin crisp crust and large volume. The rolls and loaves when proofed I gave ¼ hr. good chilling on the frost-covered lawn in the garden outside the bakehouse in Hatfield.

This 100 per cent. sponge method applied to English household bread produces excellent results and give cottage loaves of a beauty and moistness unsurpassed. Mr. Harry Crisp, a fine craftsman master baker of London will substantiate my statement.

CHAPTER XV

VIENNA AND FRENCH SPECIALITIES

At a lecture and demonstration at the twelfth London Baking Trade Exhibition at the New Horticultural Hall, Westminster, London in March, 1934.

I said :

“Why should not bona-fide commercial and fancy bread contain something more than flour, water, yeast, and salt ? If the public wants better bread, we, as bakers, can surely supply it. For better bread, however, the consumer must be prepared to pay a better price. It lies entirely with us to educate the public to this common-sense point of view. Considering the high standard of living of the people in Great Britain, it should not be too difficult a task to create a desire for better bread and back it with quality, service, and publicity.”

From the chart of ingredients for Vienna bread quantities used per sack of flour (280 lb.), it will be seen that the quantities are :—

Yeast, from	4.75 to	9.5 lb.	per sack
Salt, from	4.75 to	6.3 lb.	per sack
Malt, from	1.5 to	6.00 lb.	per sack
Sugar, from	1.5 to	20.00 lb.	per sack
Fat, from	10.5 to	40.00 lb.	per sack

In best rich fancy breads it is customary to use even as much as

16 lb. yeast	40 lb. sugar
6 lb. malt	55 lb. fat

and 3 gall. of eggs to the sack of flour. (*See table on page 128*)

Continuing, I advised the audience to use only the best flour yeast and malt extract. For milk, fresh skimmed milk or diluted full cream milk should be used, but in a case of emergency, dried milk would serve the purpose. Only animal fats, such as clarified butter (solidified), hog lard, and also margarine of a consistency of clarified butter, should be used. The sugar should be cane or soft pieces, but not denatured (refined).

Hoare's War-time Vienna Bread Method

I am happy to have the opportunity to draw attention to George E. Hoare's Vienna bread method of fermentation, introduced by him in 1943. He used water for the doughing liquid, national flour, yeast, salt, and an insignificant proportion of sugar. The loaves and rolls were first-rate, considering the absence of enrichers such as fat and milk. George E. Hoare maintained that Vienna bread doughs made with national flour of high extraction demanded modified methods of fermentation and higher temperatures.

The chart details of method and ingredients may be convenient for all purposes and size of bakeries.

With this process no other ingredients are needed to make champion Vienna bread and rolls. With emphasis, I stress the following important points : whisk the ferment briskly for 3 min. and set in a warm place. When the ferment drops, have the flour ready in a mixing bowl and pour on to it the ferment. Mix for about 3 min. ; the result will be rough lumps of dough. Now the balance of the water has to be added ; mixing proceeds until a perfectly smooth dough is obtained. At this point the dry salt must be dredged over the dough and mixing brought to an end when the dough is thoroughly made. Ferment and dough temperature are 80 deg. F.

When "knocking back," the dough pieces must not be spread, they must be properly punched and braked with the "baker's arms." Scale off in 10 oz. pieces ; hand up, let them rise well and mould into shuttle or torpedo shapes. Proceed in the customary manner and bake in a steam-filled oven at 480 or 470 deg. F. A vital point is that the dough must be young.

(See Hoare's War-time Table on page 130)

Rolls are treated and manipulated in the usual manner, and so with the proofing and baking. With satisfaction I noticed that the ovenmen in Hoare's bakery transferred the half-baked loaves to another baking chamber of a lower temperature, as is the Viennese bakers' custom.

Very rarely have I been so fortunate to see this craftsman-like procedure practised during my forty-four years here in Great Britain. Speed seems to make us forget or corrupt our time-hallowed functions.

Hoare's War-time Vienna Process with National Flour.

	1	140 lb.	70 lb.	28 lb.	8 lb.	1 gall.	3 gall.	Time	Knock back
80 deg. F. Ferment	Flour	34 lb.	17 lb.	7 lb.	1 lb.	3 $\frac{3}{4}$ lb.	11 $\frac{1}{2}$ lb.	35 min.	
	Water	68 lb.	34 lb.	13 $\frac{1}{2}$ lb.	3 pt.	5 pt.	22 $\frac{1}{2}$ lb.	to drop	
	Yeast	3 lb.	1 $\frac{3}{4}$ lb.	9 $\frac{1}{2}$ oz.	3 oz.	5 oz.	1 $\frac{1}{4}$ lb.		
	Sugar	6 oz.	3 oz.	$\frac{1}{2}$ oz.	1 oz.	1 $\frac{1}{2}$ oz.	4 oz.		
80 deg. F. Dough	Flour	106 lb.	53 lb.	21 lb.	7 lb.	13 lb.	35 $\frac{1}{4}$ lb.	1 $\frac{3}{4}$ hr.	70 min.
	Water	22 $\frac{1}{2}$ lb.	11 $\frac{1}{4}$ lb.	4 $\frac{1}{2}$ lb.	1 pt.	3 pt.	7 $\frac{3}{4}$ lb.		after mixing
	Salt	2 lb. 3 oz.	1 lb. 1 $\frac{1}{2}$ oz.	7 oz.	2 oz.	4 oz.	$\frac{3}{4}$ lb.		dough

Author's Chart of Ingredients for Vienna Rolls per Sack of Flour (280 lb.) and Temperature of Liquids.

	Yeast lb.	Salt lb.	Malt Extract lb.	Milk per cent. of Liquid	Sugar lb.	Fat lb.	Temperatures of Sponging & Doughing Liquids	Equivalent of Milk Powder
Ordinary Water Rolls ..	6.5	6.3	1.5	—	—	—	Sp. 74 deg. F. Doughing 69 deg. F.	—
Plain Dinner and Breakfast ..	4.75	4.75	3.48	50	1.5-2	—	Sp. 77-81 deg. F. Doughing 60-65 deg. F.	8
Patent Rolls ..	8.0	4.75	4.75	50	9.5	10.5	Sp. 75 deg. F. Doughing 64 deg. F.	8
Coffee Rolls ..	9.5	4.75	5.5	100	16.0	40.0	Sp. 77-81 deg. F. Doughing 68 deg. F.	16
Milk Bread ..	9.5	4.75	4.75	100	20.8	30.0	Sp. 79 deg. F. Doughing 68-69 deg. F.	16
Best Rich Fancy Bread .. (Stollen, Brioche, etc.)	16.0	4.75	6.0	Full cream 100	40.0	55.0	Sp. 77 deg. F. Doughing 62-65 deg. F.	16 eggs 3 gall.

Vienna Roll and Long Loaf Dough

(100 min. dough)

9 lb. dough (at least 6 hr. old)	3 oz. malt extract (liquid)
3 qt. water	3½ oz. salt
6 oz. yeast	¾ oz. mineral improver
	14 lb. of flour (variable)

Straight dough method. Soak the bread dough in 2 qt. water and dissolve the yeast and malt extract in the remainder of the liquid. Start mixing, and when clear, add the mineral improver wetted with little water. Dredge the sieved salt over the dough. Mix into a rather slack dough for 10 min. Dough temperature 75 deg. F. Give first knock back 50 min. after the dough has been made, second knock back ½ hr. later. Scale off after 20 min. Bake on oven bottom.



Scottish Vienna Loaf

Plain London Vienna Long Loaves

(1 hr. straight dough)

280 lb. national flour	12 to 14 lb. yeast
16 gall. water	4 lb. salt

In summer months take water from tap, in winter not higher than 85 deg. F. Mix a good dough for 15 min., let it lie for 45 min., and give good punching and pulling over from all sides. Scale off in 15 min.

Beautiful French or Vienna sticks will be obtained if sufficient labour is available and, of course, two double-decker Vienna ovens with low crown and sloping oven sole. You should have a warm bakehouse with not too high a ceiling. Proper equipment and proofing capacity are prerequisites to cope with sack doughs and ensure good results.

Vienna Rolls on Drawplate Oven

(1 gall. straight dough)

16 to 17 lb. flour	6 oz. fat
1 gall. water	2 oz. sugar
6 oz. yeast	3 lb. dough (at least 6 hr. old)
	4 oz. salt

Soak the old dough in $\frac{1}{2}$ gall. of water for $\frac{1}{2}$ hr., brake up, and disperse. Add the other half of the liquid in which the yeast and sugar have been dissolved and start mixing the dough. When clear, add the softened fat and dredge the sieved salt over the dough. Mix for 10 min. Give a knock back after 50 min. and follow with a second knock back $\frac{1}{2}$ hr. later. Let the dough recover well and scale off into heads for rolls. Proof on baking sheets and bake in drawplate oven at 480 deg. F. Dough temperature 76 deg. F.

Vienna Long Loaves and Danish Loaves

(Straight dough, short process)

29 lb. national flour	10 oz. salt
2 gall. water	2 oz. raw soya flour
14 oz. yeast	4 oz. fat

Mix into a pliable dough at 79 deg. F. Give three foldings and brakings within $1\frac{1}{2}$ hr. Work off into long loaves and bloomer shapes. Proof between cloths. Cut the Vienna loaves three times on the peel when setting and dust the bloomer shapes with flour, using a fine meshed small sieve, giving one cut only lengthwise. Bake at 460 deg. F.

Vienna Malted Whole Wheat and Rye Bread

10 lb. wheat	2 lb. fine rye flour
2 lb. wheat	$4\frac{1}{2}$ oz. yeast
	$4\frac{1}{2}$ oz. salt

Method :

Soak the wheat in water at 90 deg. F. for 5 hr. on oven stock, proofer, or warm place. Send the soaked wheat kernels through steel rollers, and with this mashed wheat and the other ingredients make a stiff dough. Scale off into 18 oz. pieces and bake in a cool oven for 22 hr.

The Famous Salt Brezl

The casual visitor of Munich's or Vienna's beer gardens or cellars, restaurants or hotels will invariably find on every table a small basket containing the delightful crisp thirst-stimulating

production of the baker—the salt brezl. This brezl-breaking and morsel-munching custom is usual all over the central European and Scandinavian countries. In the U.S.A. brezl have been baked for more than two centuries and they are eaten in large quantities : they are exported all over the world—Europe included, and it cannot be compared with the insipid mediocre biscuit one was offered in England.

The Jewish beugl is produced on similar lines, but it is not salted. It is eaten either plain or sprinkled with poppy seeds. I am giving a few formulae.

Viennese (Austrian) Brezl

Sponge at 75 deg. F. :

1½ lb. flour 1 pt. water
1½ oz. yeast

Make smooth sponge. Do not let the sponge get ripe, take it half way ; about 35 min. after making.

Dough :

4½ lb. flour (variable) 2 pt. water
¾ oz. salt

Dough temperature 72 deg. F.

Pour on the sponge 1 pt. water and add the salt. Mix into a crumby mass with the flour, sprinkle over this the remaining water and make into a pliable though stiff dough. Put the dough



Belgian Weckerl (Bridge Roll)

through pastry rollers or a biscuit breaker. As soon as the dough is mixed, work off. Weigh off into heads for the bun divider from $\frac{1}{2}$ to $1\frac{1}{2}$ oz. for each brezl. Roll the divided dough pieces into 6 to 8 tapered strips and shape into brezls, as described previously.

Put the shaped brezl on dusted or cloth-covered boards and proof for 15 to 20 min. Immerse them into boiling water for $\frac{1}{2}$ to $1\frac{1}{2}$ min., a wire frame as used for doughnut frying is very helpful here. The brezl will sink but, if correctly proofed, will come to the surface within the time indicated. As soon as the brezls appear on the surface lift them out and put them on broad slip peels about 9 in. in width. Dredge with coarse salt or salt and carraway seeds and set immediately in oven at 480 deg. F. Bake without steam ; keep damper open to make sure of good gloss on the goods.

In many places bakers prefer to brush the half-baked brezls with a flour and salt paste. Put the brezls back into the oven and draw them when the goods have a beautiful brown colour.

Brezl paste :

1 pt. water 9 oz. flour
2 oz. salt

Mix into a smooth thin paste.

The best blend for brezl consists of 25 to 50 per cent. of white rye flour and the balance of national or wheat flour. For boiling the brezl add 1 oz. of lye (Sodium hydroxide or Potassium hydroxide) to every gallon of water.

The Munich Brezl

Sponge at 75 deg. F.

4 lb. flour 2 pt. water
1 $\frac{1}{2}$ oz. yeast

Dough :

2 to 3 lb. flour (variable) 1 pt. water
1 $\frac{3}{4}$ oz. salt

Proceed exactly as with Vienna brezl, the only difference is that the sponge must be quite ripe (on the drop).

Some bakers use milk in the doughing up stage.

Sweet Bavarian Brezl

2 $\frac{1}{2}$ lb. flour (variable)	2 oz. cane sugar
1 pt. full cream milk and cream	7 oz. butter
1 oz. yeast	$\frac{1}{4}$ oz. salt

Make a batter sponge with all the milk and $1\frac{1}{4}$ lb. flour. When ripe, and before dropping, add the balance of the cold milk with sugar and salt. Begin to mix and, when the flour disappears, add

the softened butter. Mix into a smooth, stiff dough. Let rest for 20 min. ; work off on to baking sheets, proof and egg wash. Dredge with nib sugar or leave plain. Bake in a sound oven.

Bridge Rolls

(With Vienna bread dough and enriching ingredients)

12 lb. Vienna bread dough	12 oz. hog lard
2 oz. additional yeast	Little milk
4 oz. sugar	Sufficient flour

When a Vienna rolls dough is half-mixed break off 12 lb. and mix separately with above ingredients into a smooth and not too slack dough. Let come up once, knock back by folding and braking, allow to recover and work off.

These rolls may be used for sandwiching or filling. In the latter case, the rolls should be $\frac{3}{4}$ or 1 oz., their tops, when cold, sliced off, the crumb carefully scooped out and the oval shaped tops replaced like lids.

If desired, the addition of 4 to 6 eggs to the dough makes all the difference with regards to quality and appearance.

First-class hotels and restaurants and of course good class private establishments are regular clients for these goods.

Vienna Wheatmeal Rolls

In Vienna wheatmeal rolls are looked upon as an item in the diet. The doughing liquid is either entirely or half milk and half water. A thin batter sponge with half the total liquid is the best method in this case. To each quart of water use $1\frac{1}{2}$ lb. of white, at the present time, national flour. Temperature of the sponging water should be 75 deg. F.

I made excellent crisp wheatmeal rolls in large quantities, in one of the largest Vienna bakeries of Great Britain many years ago with a 4 hr., thin batter, half sponge.

The balance of the liquid (milk and water) in both cases is added quite cold even in winter time and the sponge must be quite ripe and begin to drop. A slack dough should be well mixed and knocked back twice, first time after the dough has risen fully, and second time 20 min. later. Scale off after the second knock back.

For small wheatmeal roll doughs, the necessary quantity of sponge may be taken from another sponge to save time and labour. In Vienna's bakeries it is customary to make a mother sponge, for say, three different doughs ; when ripe, all the salt and balance of the liquid are added, the whole mass cleared, and the necessary sponge quantities divided for the making of the doughs.

Delicious "Graham" rolls, as the Viennese call these wheat-meal rolls, may be made by using $1\frac{1}{2}$ lb. of Vienna crescent dough to each quart of liquid.

Vienna Graham Roll Dough

(1gall. dough)

8 lb. wheatmeal	3 oz. yeast
8 lb. "Millenium" flour	2 oz. malt extract
2 qt. full cream milk	5 oz. salt
2 qt. water	4 oz. lard or butterfat

Sponge :

Make a thin batter sponge to ferment for 2 hr., with 2 qt. water, the yeast, malt extract, and $3\frac{1}{2}$ lb. flour.

Doughing up :

Pour into the sponge 2 qt. cold full cream milk with the dissolved salt and start mixing. After clearing, add the remainder of the flour and the wheatmeal and the lard. Make a not too firm dough. Finish dough-making by braking. Lay up, give one knock back and folding when it has risen to its fullest. After $\frac{1}{2}$ hr. or so weigh off into heads for the bun divider. Mould round or shuttle-shaped, proof on cloth-covered boards upside down, and give full proof. Turn over and set in steam, bake well in 410 deg. F. Sponge temperature 75 deg. F., dough temperature 75 deg. F.

These rolls may be very successfully made by sponging 50 per cent. of liquid with its own weight of water and more yeast. Follow the same procedure as for kaiser roll dough. The bakeability of the flours and meals one has to use has to be considered first in every case.

First-class Brown Rolls

(1 gall. dough)

1st Sponge :

2 qt. cold milk	4 oz. malt extract
6 oz. yeast	4 lb. flour

Make into smooth sponge by thorough slapping ; let it stand for 2 hr.

2nd Sponge :

Pour into the first sponge 1 qt. milk (85 deg. F.) add $\frac{1}{2}$ lb. flour and whisk up or slap with hand. Let stand for 30 to 45 min.

3rd Doughing up :

1 qt. milk	85 deg. F.	4 oz. soft pieces sugar
4 oz. salt		4 oz. hog lard or butterfat
12 lb. flour and wheatmeal		

Mix into a good dough, let it ferment for 30 to 45 min., and then proceed as usual. This will also make a good 1 lb. loaf ; either oven bottom or baked in tins.

Vienna Graham Rolls (Uhl Breunig Vienna)

26 lb. wholemeal	2 oz. yeast
8 lb. flour	1 oz. salt
16 lb. crescent roll dough	2 gall. milk and water 50 per cent. + 50 per cent.

Disperse the yeast and water in 1 qt. water. Pull the crescent roll dough into 1 lb. pieces, place them into dough mixer, gradually add the liquor, flours, and the lard, and make into a not-too-firm dough. Keep a few pounds of flour back for continually dusting the surface of the dough mass. In this manner, a dry dough will form much easier.



French Brioche

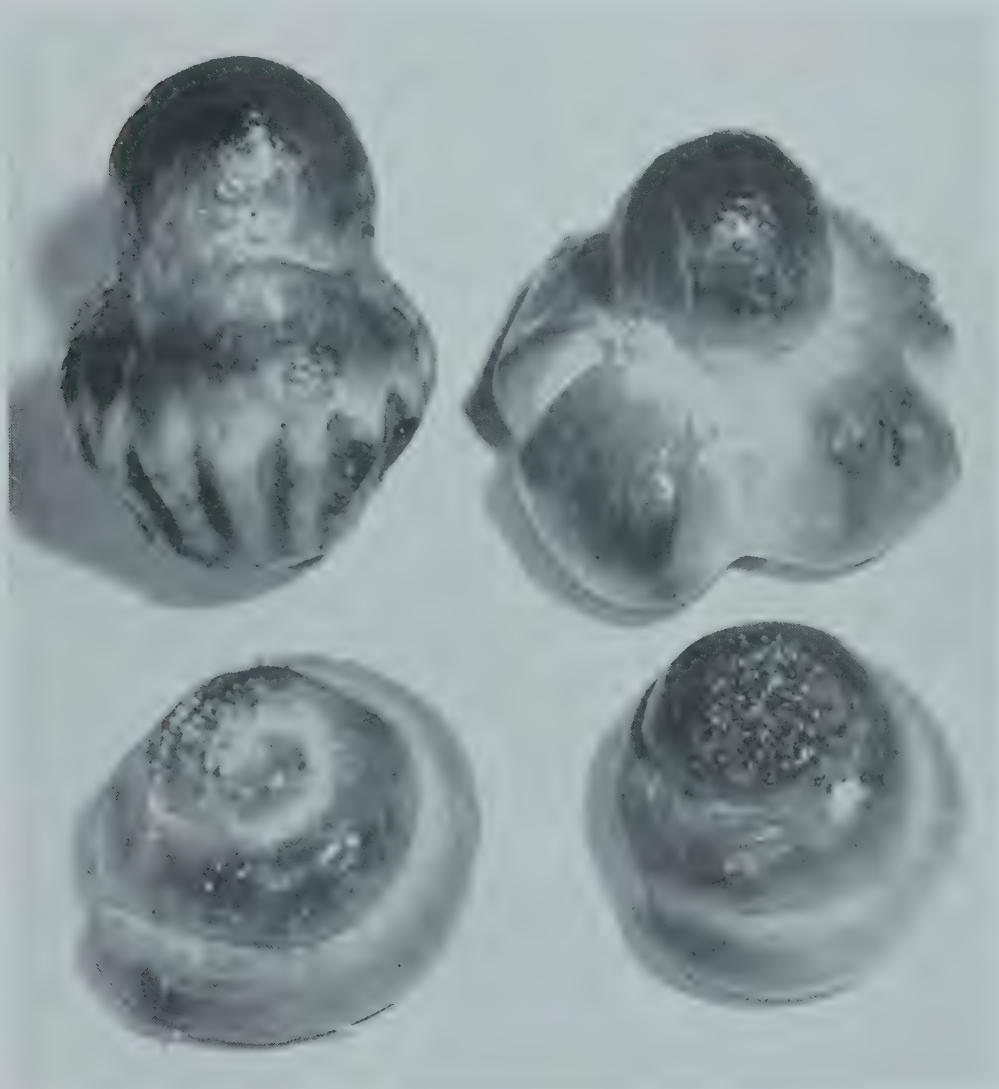
Let it come up well once, knock back, and work off when ready. These were the best brown rolls in the whole of Vienna. I did not disclose to anybody the formula which was adhered to for many years.

Vienna Brioche

2½ lb. flour (Hungarian)	$\frac{3}{4}$ oz. yeast
1 lb. 14 oz. butter	$\frac{1}{4}$ oz. salt
5 oz. sugar	16 eggs
Sufficient water and milk	

Make a stiff sponge with : $\frac{1}{2}$ lb. flour, $\frac{1}{2}$ oz. sugar, 6 oz. warm water and $\frac{3}{4}$ oz. yeast.

When the sponge is fully ripe, mix with all the other ingredients



French and Belgian Brioches

and a little milk, into a smooth and firm dough. Work the dough very well. After 2 hr. put the paste into the refrigerator and let

rest overnight. Proof in the ordinary bakehouse temperature and work off.

French Brioche Dough

(10 to 12 hr. dough)

Sponge :

10 oz. flour ("Millenium" type) 1½ oz. yeast (bare)
8 oz. water (lukewarm)

Dissolve the yeast in the water and prepare a smooth sponge. Ferment for ½ hr. under cover in a warm place and let it get ripe. Meanwhile make a dough from the following ingredients.

1¼ lb. flour	6 eggs
1 lb. 9 oz. of butter	12 yolks
2 oz. sugar	¼ pt. single cream
	⅛ oz. salt

When the sponge is ripe, pull it into small pieces and work together with the dough until it is a smooth and well made dough. Let it rest in refrigerator for 10 to 12 hr. Before working off, let the paste rise twice in the bakehouse, giving it one knock back.

Uhl-Breunig Guglhupf (I)

(Best quality)

2½ lb. flour	½ oz. malt extract
1¼ lb. butter	1 pt. milk
6 oz. sugar	¼ oz. salt
8 eggs	4 oz. chopped almonds
4 yolks of eggs	Zest of 2 lemons
3½ oz. yeast	7 oz. sultanas

Make a sponge with ½ pt. of warm milk (95 deg. F.), 10 oz. flour, the yeast and the malt extract. Let it rise and, when ripe, add the creamed butter, sugar, eggs, salt, lemon zest, chopped almond, sultanas, and remainder of flour. Give the dough a good beating with spatula or on the machine, and put it immediately into shapes. Proceed in the usual way.

Another good quality Guglhupf (II)

2 lb. flour	14 oz. butter
½ pt. milk	14 oz. icing sugar
2½ oz. yeast	16 whole eggs
Pinch of salt	7 oz. sultanas

Make a sponge with ¼ pt. warm milk, and when ripe add the creamed butter, sugar, eggs, and the remainder of ingredients.

Beat up very well and fill into shapes immediately. Proceed in the usual way.

Guglhupf (III)

2 $\frac{1}{4}$ lb. flour	4 $\frac{1}{4}$ oz. sugar
3 oz. yeast	8 whole eggs or 20 yolks of eggs
Pinch of salt	7 oz. sultanas
$\frac{3}{4}$ lb. butter	Zest of lemon

Sufficient milk

Dissolve the yeast in sufficient warm milk, add $\frac{1}{2}$ oz. sugar and flour to make a thin batter sponge. Let it rise and get ripe. Meanwhile, cream the butter with the sugar, add the yolks or eggs, gradually the salt and the zest of lemon, and mix with the ripe sponge into a medium dough. Slap or beat the dough very well with spatula or in a machine. Finally add the sultanas, about 1 lb., and proceed as usual.

Guglhupf (IV)

(Gerebelt) Famous Type

2 $\frac{1}{2}$ lb. flour	2 oz. sugar
$\frac{1}{2}$ oz. yeast	1 egg and three yolks
Pinch of salt	Sufficient milk about $\frac{3}{4}$ pt.
1 $\frac{1}{4}$ lb. butter	1 lb. sultanas (or more)

Zest of lemon

Dissolve the yeast in warm milk, make into a sponge with sufficient flour, and let it rise. Meanwhile, chop the butter into small pieces and mix well into the flour. Beat the eggs, yolks, and sugar together and mix into a dough with sufficient warm milk. Proceed as usual. This is an excellent quality cake.

Restaurant Eisevogl Guglhupf (V)

(Prater - Vienna)

1 $\frac{3}{4}$ lb. flour	4 eggs
2 oz. yeast	5 oz. icing sugar
$\frac{3}{4}$ lb. butter	7 oz. sultanas
12 yolks	Sufficient milk

Make a small sponge with sufficient milk, and let it get ripe. Cream the butter and sugar, add the eggs and yolks, and salt, then mix them with sponge, adding the flour and sufficient lukewarm milk to make a smooth, slack dough. Beat up well with spatula.

Fill immediately into prepared shapes. Proof in dry warmth. Bake carefully on hot baking sheets.

When drawn and still hot, dredge with vanilla icing sugar.

Viennese Savoury for Cocktails, etc.

2 lb. flour	$\frac{3}{8}$ pt. of single cream
$2\frac{1}{2}$ oz. yeast	$\frac{3}{4}$ pt. chablis (white wine)
$\frac{1}{2}$ oz. salt	5 oz. fibrous remnants from
$\frac{3}{4}$ pt. milk (bare)	melted lard
6 yolks of eggs	1 oz. caraway seeds

Make a sponge with lukewarm milk, yeast, and 1 lb. flour. Let it get ripe. Whisk the yolks with the cream and the wine, add the salt, add to the sponge and with the remainder of flour, make into a paste. Give three half-turns with the rolling pin, allow to rest in the refrigerator for at least $\frac{1}{2}$ hr, then roll out to $\frac{1}{8}$ in.

Cut into fancy shapes, egg wash, dredge with salt, caraway seeds, etc., and bake in a sharp oven.

Pressburg Beugel

(Walnut and poppy seed crescent)

These delicious specialities, made from a fermented, rich short paste, have their patrons among every class and nationality. They were the speciality at one time of the Austro-Hungarian Monarchy. They keep for many weeks if properly stored in air-tight tin boxes and are known the whole world over. There are many imitations passed off as the genuine article.

I made these crescents in Vienna with my master Herr Carl Elis, whose bakery still exists in the IVth District, Karolinen gasse. Herr Elis had a very distinguished clientele among the then imperial, aristocratic and patrician families. I took special fancy milk tea breads, brioche and suchlike to the Belvedere, the one-time residence of Archduke Francis Ferdinand. I shall give a few formulae.

1. (Recipe of a former Hungarian Patisier of the Carlton Hotel).

5 lb. flour ("Millenium" type)	3 oz. yeast
$2\frac{1}{2}$ lb. butter (or cake margarine)	1 pt. cold milk
6 oz. fine castor sugar	$\frac{1}{2}$ oz. salt

Dissolve the yeast in a little cold milk. Cream the butter with the sugar in a bay on the table. Add the dissolved yeast and the flour. Make this into a smooth paste and work off at once.

Some pastrycooks prefer a preliminary sponge, in which case

$\frac{1}{6}$ pt. warm milk (95 deg. F.) should be used with 4 oz. flour. When ripe, proceed in the usual way.

Scale off into heads to be cut in the bun divider, $2\frac{1}{4}$ lb. of paste for 36 pieces. Each piece should weigh $\frac{3}{4}$ to 1 oz. Mould the pieces round, roll with the rolling pin into oval shapes about 4 in. long and $1\frac{1}{2}$ in. wide. Place them on the table closely side by side and put oz. walnut or poppy seed filling on each piece. Shape the filling neatly with the finger tips into 3 in. tapered strips along the centre. Fold the paste over the filling from one side, to cover it. When all the pieces have been dealt with, wash slightly with milk or water and fold over the other side of the paste. Close the crescent well and shape gently into a tapered torpedo shape.

Place on greased baking sheets with the close right down. Turn the points or ends towards each other about $\frac{1}{2}$ in., leaving a space of 2 in. between the points. Now squeeze gently with thumb and forefinger the sides of the crescents in the centre from and towards the points, making this an edge. A cross cut through the crescent would have the shape of an equilateral triangle.

Glaze the crescents with egg into which a few drops of black-jack, caramel, or honey have previously been poured. Apply a second glazing just as soon as the first has dried. After 10 min. in a dry proofer, let the crescents proof in a cool place very slowly. When ready for the oven, the surface of the crescents must have a mottled appearance. Bake in a medium oven.

To distinguish the walnut and poppy seed or honey seed crescents from each other one generally stabs one kind in the middle with a knitting needle before baking. When cold they can be packed like biscuits or shortbread into tin boxes.

2. Pressburg Beugl (Viennese Genre)

$2\frac{1}{4}$ lb. flour ("Millenium" type)	$2\frac{1}{4}$ oz. yeast
$14\frac{1}{2}$ oz. butter	4 eggs
$2\frac{1}{4}$ oz. sugar	Little milk
Pinch of salt	

Make a sponge with the yeast dispersed in $\frac{1}{6}$ pt. milk (95 deg. F.) and 4 oz. flour. Let it get quite ripe. Work all ingredients into a smooth, but not too stiff, paste. Proceed as described.

3. Pressburg Beugl (another Viennese recipe)

3 lb. 2 oz. flour ("Millenium" type)	6 yolks of eggs
1 lb. 2 oz. hog lard	Milk
5 oz. sugar	Pinch of salt
3 oz. yeast	Zest of lemon

Make a sponge as under 2. All the paste must be extremely well mixed, kneaded, and worked off immediately.

The walnut and poppy seed fillings for these goods will be found under the heading "Fillings for Continental Pastries."

Savarins

2 lb. 10 oz. flour	1½ pt. eggs (shell)
("Millenium" type)	6 oz. fine castor sugar
1½ oz. yeast	⅛ oz. salt
1 pt. cream	Little orange flower water

Make a sponge with ½ pt. cream, yeast, and soya flour. Let it get ripe and add the whisked warmed eggs, cream, sugar, and salt. Make into a thin dough capable of being piped with the savoy bag. Fill the shapes immediately the savarin paste is mixed. Bake in a sound oven.

Drench the savarins in marachino-flavoured syrup.

Marachino liquor made in Zara, Yugoslavia, is supreme.

Coronation Bun

Make a flying sponge with half milk and half water for this particular bun, consisting of :

1 pt. milk and water about	½ oz. malt extract or 1 oz.
100 deg. F.	brown sugar
4½ oz. fast-working yeast	20 oz. strong flour

Make this into a good sponge without any lumps. Dust the sponge with a good layer of flour and let it rise for about 20 min. when it will be ready to make the dough as follows :—

Add to the sponge,	
1 pt. cold water	5 eggs
¾ oz. salt	Rum essence
8 oz. sugar	3¾ lb. good flour (about)
8 oz. good cake margarine, or	
any mixture of good fat	

Make this into a good dough, let it rise for about ¾ hr., divide, and scale 4 lb. pieces. Roll them into a rectangular shape about ½ in. thick and put on each, cake margarine or butter in small half-walnut size pieces : allow for every 1 lb. dough, 3 oz. butter or margarine, on no account use pastry margarine.

Proceed as for making puff pastry. Give these three half-turns letting the dough rest for at least 20 min. before each. It is a very good plan to put the dough into a cooling cupboard. The cooler the dough is kept the better.

For the finishing off of this bun you have to spread a filling over the dough : it consists of :

1 lb. of good cake margarine or butter mixture	2 lb. castor sugar 10 eggs
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This is beaten up in the usual way as for making a good batter.

Add :

$\frac{3}{4}$ lb. ground almonds	$\frac{3}{4}$ lb. genoise sponge or plain cake crumbs
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Mix with a little cold water or milk to a paste of the consistency of marzipan and flavoured with vanilla essence.

The buns are made in a similar way to chelsea buns.

Roll the 4 lb. pieces into rectangular pieces, spread a thin layer of the filling all over the surface of the paste, and sprinkle a few sultanas over it. If customers are fond of cinnamon, you can sprinkle a little of this, too. Roll up the rectangular piece of paste as for a swiss roll, and as we have already said, cut into pieces or slices as for chelsea buns, at about 1 in. distance. In the circular side make five incisions $\frac{1}{2}$ in. in length, and then press each piece with the finger-tips so that it spreads out to give a crown shape effect.

Place the buns beside each other on the baking sheet, giving ample space for spreading and proofing. Glaze with eggs and proof in a slightly humid atmosphere, but be careful that the proofer is not too warm, or the butter will run out of the paste.

When the buns are proofed, glaze them again with eggs, and pipe a thin strip of boiled custard right across the bun (as in illustration) above the incisions.

The paste should be baked in an oven of 440 deg. F. and, when removed from the oven, can be iced slightly with rum-flavoured water icing or dusted with icing sugar. If left plain they show the beautiful yellow strip of custard.

This is the nearest approach to a crown, therefore the name, "Coronation Bun."

CHAPTER XVI.

PLUNDER PASTRIES, DANISH VIENNA BREADS, OR DANISH PASTRIES.

More than eighty years ago, two Viennese "sugar bakers" (the Austrian equivalent of the British pastrycook) arrived in Copenhagen. They walked all the way, as it was the time-hallowed custom for the young members of our Craft-Guilds to gather experience and knowledge in many cities and strange lands.

These two young fellows introduced for the first time a variety of yeast-raised puff pastries which became great favourites in Denmark and Scandinavian countries under the collective name of "Wiener Bröd," denoting "Vienna Bread."

British and American bakers call this class of goods "Danish Pastries."

In 1910, I made "Danish Pastries" under the name of "Vienna Tea Bread" in Scotland. Incidentally, another Viennese pastrycook made similar goods at the same time in Glasgow at the famous establishment of James Craig.

A Danish pastrycook, Herr L. C. Klitteng of Laeso, called on December 17, 1913, at the King-Emperor's bakery Uhl-Breunig in Vienna. He was on a tour round the world, setting out without any money. He taught his colleagues the mysteries of making genuine "Danish Pastries." Herr Klitteng went through Sweden, Finland, Russia, Germany, and Austria.

He offered Herr Joseph Breunig, a former principal of mine, owner of the above bakery, a few novel lines ; it was a great surprise to the old gentleman when the worthy Dane showed his productions, for which he received a fee of £6. They were recognised as Vienna plunder dough pastries.

Danish Vienna Bread

These delicious, fermented puff pastries can be made with an off-hand basic dough and with batter sponge. I prefer the batter method every time, because the baked goods eat more mellow than those made with a straight dough. Since the last war, with national flour, I used baking powder at the rate of a $\frac{1}{4}$ oz. to each pound of flour and always had excellent results. A strong or fast yeast is preferable to any other, and must be supported by a first-

class pastry fat, not pastry margarine ; a refrigerator is a guarantor for ultimate success.

For this class of goods use the Viennese sponging technique—one-third or one-half of the total liquid to be employed with the sponge.

2 qt. dough and paste

2 qt. fresh full cream milk	14 oz. castor sugar
10 lb. flour	4½ lb. butter, pliable cake
9 oz. fast yeast or up to 1 lb. normal yeast	margarine, nut butter, or mixture of it
2 oz. liquid or ½ oz. crystal- lised malt extract	Zest of 2 lemons
12 eggs (1 pt).	2oz. Rum
	½ oz. salt

Make a smooth batter sponge with 50 per cent. of the milk, at 100 deg. F., the malt extract, and 2½ lb. flour. Dust the surface with flour and put the bowl containing the sponge on the ovenstock or in a warm place. Meanwhile, whisk the remainder of the cold milk, eggs, sugar, salt, zest of lemon, and rum together and pour the lot into the sponge as soon as air bubbles appear. Clear the mass and mix with 4 oz. softened butter and the rest of the flour into a medium, not-too-tight dough. It must be well made and not stick to the bowl or board. Dough temperature should never be above 70 deg. F. During summer it is good policy to substitute crushed ice for $\frac{1}{8}$ to $\frac{1}{6}$ of the total milk. The ice should be thrown into the sponge with the doughing solution. When mixing the dough in this manner, the ice melts immediately when it comes into contact with the warmer flour.

Put the dough well protected into a cool place for 30 min. A refrigerator or ice box is the thing for this job. After this, weigh off into 4 to 8 lb. pieces and pin out by hand or with power-driven pastry rollers into rectangular, $\frac{1}{4}$ in. thick shape. Allow 3 to 6 oz. butter to every 1 lb. basic dough. For rolling or folding in I never used pastry margarine, as the sensation on the palate is most repugnant to anybody who appreciates good food. Tough, pliable butter, nut butters, or a blend of both or an admixture of a first-class table margarine made with sour milk cultures give the best results.

As with everything quality is best ; with second-rate raw materials only poor and invariably desperate imitations can be made and they are the cause of the discerning customers' resistance to buy. That is one of the causes that puff pastry goods appear to have lost in public favour. The butter or butter blend should be

prepared and conditioned before being rolled in by pressing any water out of the butter, washing out the salt as well and kneading it either by itself or with nut butter and/or margarine with a little flour to a pliable consistency. Break into $\frac{1}{2}$ lb. pieces and roll out long strips about $\frac{1}{2}$ in. thick. Condition for a short time in the refrigerator. Before rolling in, break into two and cover half the basic dough sheet with hazelnut-sized pats by breaking them off the strip. It is a cleaner and more efficient way of working than the messy one. Men who have warm hands should not attempt to make this class of goods. Flatten the butter pats well down with both hands to an even layer and fold the uncovered part of the dough sheet over it, closing its three sides well. Use the clean and soft-haired brush very frequently during every rolling and shaping manipulation.

Roll out into oblong shapes and give it half a turn (folding simply into three) as for puff pastry goods. Brush off any flour and put away to rest for $\frac{1}{2}$ hr. or so. Follow up with a "book fold," namely, roll out into a rather narrow oblong shape and fold the two short ends towards the centre of the paste sheet bringing them close together. Seal and fold one part over the other like the leaf of a book. Level gently out and give another rest for $\frac{1}{2}$ hr. Now the last half turn has to be applied for working the paste off into the final shapes. The paste will be improved and the baked articles eat more mellowly if prepared the day before and stored overnight in the refrigerator, without the last half turn, of course.

A wide range of first-class delicious pastries and cakes can be made from this paste. From one $4\frac{1}{2}$ lb. piece of paste, one can cut four dozen shapes, sometimes more. Larger pieces, such as Danish and Dutch crowns, Copenhagen loaf, Bismarks, Prince of Wales roll, apple strudel, Swiss weiber fruit flans, American coffee rings, and suchlike, are sold by weight at top price.

The goods must be put on baking sheets or into special shapes and be proofed in the ordinary bakehouse temperature and not in a steam-filled proofer. When fully proofed they are glazed a second time with eggs and finished off in many ways before baking as I shall describe in due course.

Bake on double baking sheets only when necessary, in an oven seldom above 440 deg. F.

The filling of the pastries is done with red currant or apricot jam, powidl, a kind of preserve made from plums concentrated or prunes flavoured with rum and cinnamon, apples, cherries, apricots, sweet curd of milk, remonse (Scandinavian mode), vanilla custard, marzipan, almonds, milk curd, walnut, and poppy seed preparations, preserved ginger, glace cherries, and so forth.

Varieties of Shapes Sea Shell

Roll out a $4\frac{1}{2}$ lb. piece of paste into an oblong sheet $\frac{1}{5}$ in. thick. Cut with a sharp knife into strips $2\frac{1}{2}$ in. wide. Spread along the centre remonse filling $\frac{3}{4}$ in. wide, fold over, and join the long edges. Cut the strips into 2 to 3 in. long pieces (according to price) and arrange them alongside the table towards you. Cut the edges



Dragon Teeth or Combs

Sea Shell

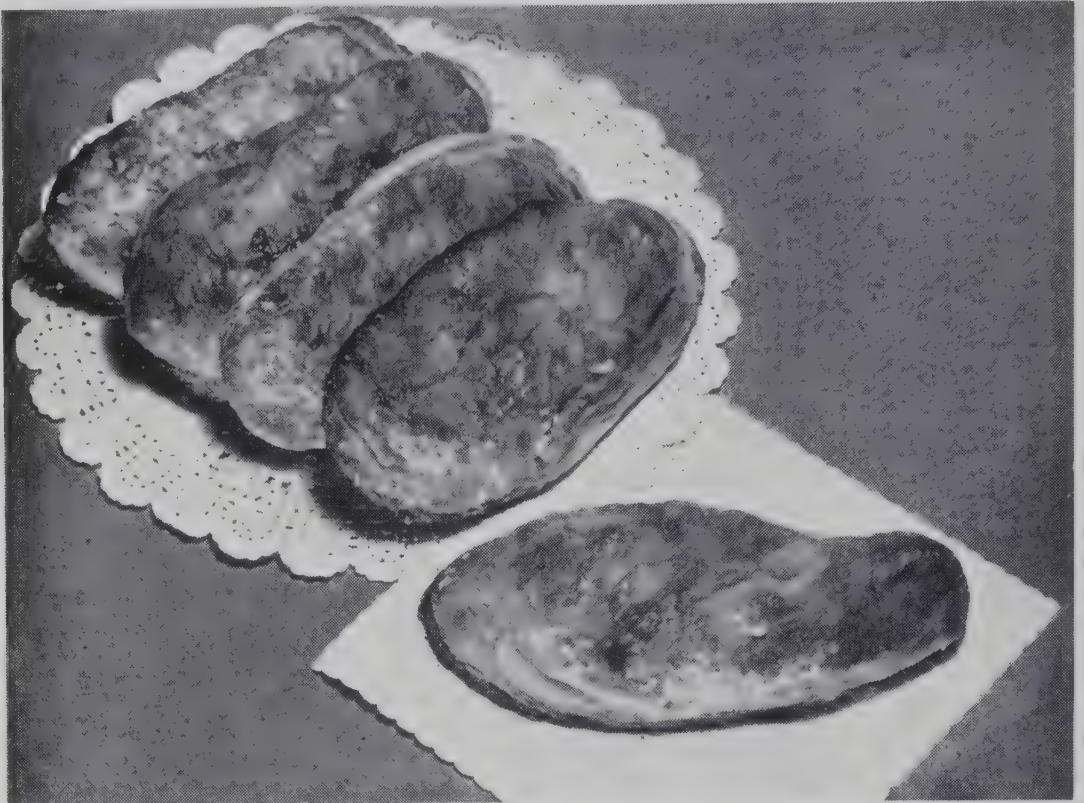
of every piece ten to twelve times clean through, right up to the bend of the fold, leaving about $\frac{1}{5}$ of the width uncut. Egg-wash, join the ends together, and place on baking sheets. Proof and egg-wash again before baking. Pipe a spot of boiled cold custard (vanilla) in the centre. When baked, finish off as mentioned above.

Dragon Teeth or Combs

The oblong-folded paste strips are filled and folded as described above. Cut the whole strip along the edge towards you very closely. Then cut off 2 to 3 in. pieces and set quarter-moon shaped, on baking sheets, showing the cuts distinctly. Egg-wash twice and pipe a strip of custard along the semi-circular uncut edge of each piece. Children called them "buns with teeth in." Finish off with castor icing or thin fondant.

The Lorgnon Roll or Eyeglasses

Roll out a piece of paste as for chelsea buns. Spread remonse filling over the surface of the sheet of paste, leaving one of the long edges free ($\frac{1}{2}$ in.) for egg-washing and sealing the roll. Sprinkle liberally with sultanas and currants. Cut the roll into suitable slices and each slice almost into two. When putting on to the baking sheets give every piece a twist and turn to obtain the effect of a figure-eight shape. In finishing off, treat as above, using two spots of custard.



Englander Sweet

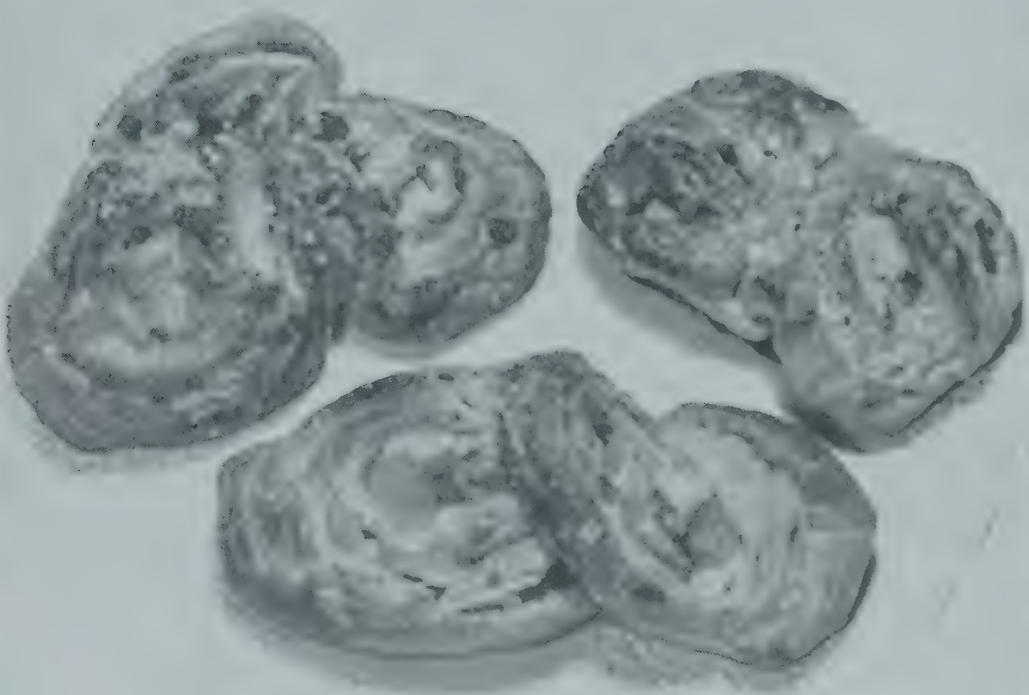
Threefold or Papillon

Roll out as for the lorgnon, but have the paste thinner, with wider slices and longer pieces. Each piece should have two parallel cuts. Lay out in fan-like manner, egg-wash twice and pipe three spots of custard on each section of the "Threefold."

The most popular shape of a Danish pastry in Scotland, where this class of goods is more appreciated than in any other part of Great Britain, is the custard bun, introduced by my Viennese colleague at James Craigs' bakery in Glasgow and by myself at Messrs. J. & B. Stevenson's in the same city in 1910.

Scottish Custard Bun

Roll out a 4 lb. piece of paste $\frac{1}{4}$ in. thick, cut with a sharp knife strips 2 in. wide, and from them 2 in. pieces. Hold the knife at 45 deg. : this is imperative as the largest surface area of every side of the square is thus obtained, and that is vitally important if you are to get articles of a flaky character and perfect finish. Put the number of pieces required side by side in good order and on each place a piece of fruit, a spot of jam, or some remonse. Grip one of the corners of the pastry piece with the middle finger and thumb of the left hand, stretch gently towards the centre of the square pastry piece ; repeat the same manipulation with your right hand by stretching the opposite corner of the pastry piece right over the first fold from the left squeezing the end to the utmost between finger and thumb, bringing right underneath the bun to be sealed.



Papillon

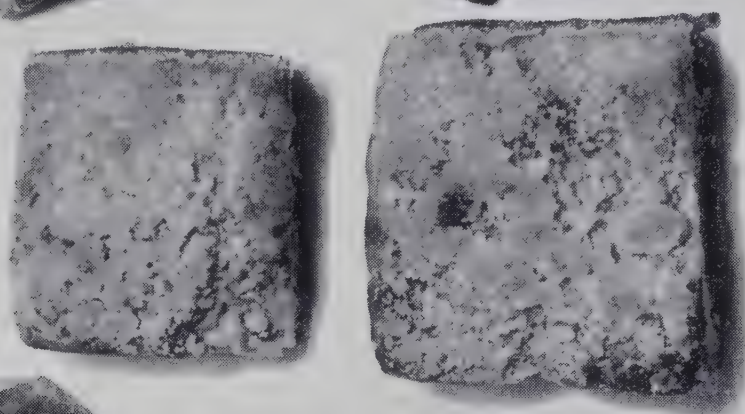
Lorgnon

Threefold

Place on baking sheets, allowing sufficient space for proofing, egg-wash twice, and pipe two spots of vanilla custard on the bun as shown in the illustration. After baking and while still hot finish off with lemon-flavoured water icing.



Plunder Brezl



*Streussel Square
(Plunder Paste)*



*Belgian Custard Pastries
(Plunder Paste)*

“Polster Zipf” or Turnovers

Roll out paste $\frac{1}{8}$ in. thick. Cut strips $2\frac{1}{2}$ in. wide into diamond-shaped pieces (parallelogrammes) and set side by side on the table. Put a spot of jam, remonse, almond, or cream cheese filling in the centre. Glaze two edges at one of the acute angles or points with eggs and fold the egg-glazed half over the non-glazed, leaving a border of $\frac{1}{8}$ in. at the two sides of the now triangular-shaped turnover.

Before proofing turn upside down on baking sheets, egg-wash twice, and pipe with custard a semi-colon from the centre toward the point of the turnover, where the cut edges meet. When baked and still hot apply lemon-flavoured water icing or fondant.

The Dicky Bow

Roll out paste $\frac{1}{4}$ in. thick, and cut strips $1\frac{1}{2}$ in. wide. Cut diamond-shaped pieces 2 in. long. When placing on the baking sheets, twist each piece in opposite directions and, with the middle finger of both hands, press firmly down on both sides of the “knot” of the “Dicky Bow.” Into the two grooves thus created place a quarter of cherry, ginger or a muscatel raisin. Egg-wash twice and pipe custard on the fruit before baking. When baked, finish in the usual way or dip both points in chocolate fondant.

Viennese Gollatschen (Kollachy)

This is the original and most popular fermented plunder dough pastry in Austria, Czechoslovakia and the U.S.A.

Roll out and cut into squares as for custard buns. Put a spot of powidl, jam, or cream cheese in the centre, pull the opposite corners firmly towards each other, and join them together by sealing the ends. Repeat the same process with the two remaining corners of the dough square. Seal well in the middle. Egg-wash twice and pipe four dots of custard in the “loops” or grooves. To dredge the baked Gollatschen with vanilla icing sugar gives an attractive finish.

Emperor Francis Joseph’s Favourites

Plunder Dough Pastries

$2\frac{1}{4}$ lb. Hungarian flour	1 oz. rum
$\frac{3}{4}$ pt. full cream milk	Zest of 1 lemon
3 oz. yeast	$\frac{1}{4}$ oz. salt
7 yolks of eggs	$2\frac{1}{8}$ lb. butter (for rolling in)

Make a batter sponge with $\frac{1}{4}$ pt. lukewarm milk, the yeast, $\frac{1}{2}$ oz. sugar and 6 oz. flour. When ripe, pour the rest of the milk



*Belgian Cream Horn
(filled with vanilla custard)*

*Schuberts Vienna Plunder Pastries
(filled with chocolate almond mixing)*

wherein the yolks, sugar, lemon zest, salt, and rum were whisked, and mix into a not-too-firm dough, not forgetting to add 2 oz. of softened butter to the unmixed dough. Dough temperature should be 68 to 70 deg. F. Let rest for $\frac{1}{2}$ hr. and proceed with rolling in of the 2 lb. 2 oz. of butter, as for Danish pastry or Danish Vienna bread. Then follow the technique of cutting, shaping, proofing, and all phases as outlined above.

The Emperor's favourite shape was the Plunder Brezl, a mythological symbol denoting eternity or the infinite. The brezl appears in the crests or coats of arms of the bakers' guilds of Austria, Germany, Switzerland, and in many central European and Scandinavian countries.

Here in England I found this mystical brezl shape on buildings in Staffordshire where it is known as the Staffordshire Knot.

The brezl is very popular on the Continent and, of course, in the United States where a few baker dynasties have carried on for two centuries brezl production.

This brezl is usually a crisp, savoury morsel taken with beer, wine, or cocktails. There are many members of the brezl family, as for instance, salt, sugar, egg, brioche, and plunder brezl.

The shape is made from one strand or strip of paste $\frac{1}{8}$ in. thick, $\frac{1}{4}$ in. wide, and about 9 in. long. Make a loop as for tying a knot, holding one end in each hand. Bring the two ends of the paste strip onto the arch crosswise, opposite each other. Before making the loop, twist or roll at the ends of the strips on the table to get a corkscrew-like strip. The brezls are put on greased baking sheets with the ends on top; they are glazed with eggs and proofed in dry warmth. Before baking glaze with eggs once more and dredge with chopped almonds, nib sugar or on the plain ones pipe cold Vanilla custard dots on the joining points. Also blue poppy seeds on brioche brezl are very much in favour. When baked, whilst still hot apply some thin flavoured fondant or water icing, of course not on the nib sugar and poppy seed dressed ones.

The Viennese Gollatschen

This was also an imperial favourite. It is composed of 2 oz. squares of paste filled with sweet milk cream curd and a few sultanas with the corners of the paste sealed across each other. Egg-washed, proofed, baked, and dredged with icing sugar.

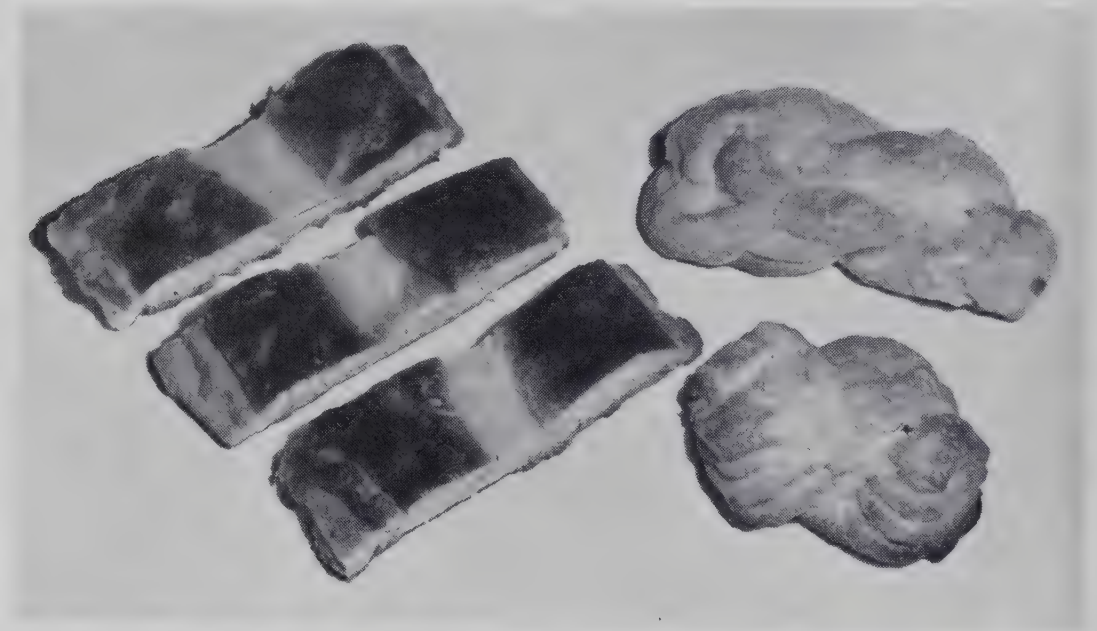
The Belgian Custard Roll

Roll out and cut strips of paste as for cream horns. Use smooth, round, wooden sticks, about 5 in. long and $\frac{1}{8}$ in. diameter and proceed as for cream horns. Place the pieces in rows firmly on baking sheets. Let proof, egg-wash twice, and bake. After baking,

pull the pastries off the sticks by turning the sticks, and, when cold, fill with vanilla custard ; finish in the usual way.

I include the dainties which will be welcome by the British confectioner and his customers. For instance, the “Englaender” or “Englishman,” a delicious, crisp and succulent Danish pastry made only in the Gerber bakery, Vienna I Am Peter. Or the late Emperor Francis Joseph’s favourite Gollatschen filled with Powidl, a sort of thick jam made from plums or prunes, very popular with the people of Austria, Czechoslovakia, Poland, Hungary, and Jugoslavia, and not to forget the torpedo-shaped flaky roll made from unsweetened Danish paste, to be sandwiched with ham or caviar—an outstanding delicacy to be found in the best confectioners’ shops and most exclusive catering establishments of Belgium and France.

Now—and let us hope in the not-too-far-off normal times—when food will be more plentiful, Danish pastries ought to be made by every good-class family baker and confectioner every day, year in and year out. Danish pastries can be as popular here as in the U.S.A. and on the Continent. They are very profitable and possess distinctive and delightful culinary qualities which even jaded appetites can seldom resist.



Embassy Slices

Plunder Pastries

I am indebted to the beautiful daughter, Fanni, of M. Benedikter, personal patissier of Emperor Francis Joseph for many years—for all the Imperial Recipes I possess. M. Benedikter’s son, Alphonse, was a schoolmate and in later years a brother officer of mine. Often I enjoyed the hospitality of the large Benedikter family as a youth and as a young man. I passed Alphonse’s house every day on my way from the studio of my uncle, a water-colour

painter and musician, with whom I lived, to the Radetzky barracks when I served as a one year volunteer in the famous K.U.K. Infantry Regiment No. 4.

At that time, twenty-one years of age, I was blessed with a huge appetite. Verily, Lucullus, I am sure, did not enjoy better cooked dishes than I did on M. Benedikter's table. Alphonse's sister was as great a cook as she was beautiful. Venison, game, wild boar and the feathered creatures from the Imperial shooting preserves were my great weaknesses.

M. Benedikter, his beautiful daughter Fanni, Alphonse and I made a quartette on Sundays and saints' days, taking walks in the lovely surroundings of Vienna after church. We enjoyed the wines, the music, and the songs as only the arcadian Viennese can. With gusto we three young people listened to the latest "bon mots" and anecdotes told at the Imperial Court. From M. Benedikter I learned the factual, and never disclosed circumstances under which the tragic death of the Crown Prince Rudolf took place at his hunting lodge at Mayerling.

I pointed out this historical and beautiful spot to the party of Scottish master bakers and confectionery teachers in 1928, when they were with us for four days.

The recipes of the Emperor's plunder dough, guglhupf cake, chocolate gateau, and coffee essence were given to me by M. Benedikter's daughter. My family were her guests for some time during the first world war. Her father had died. Her only brother, my friend, became a prisoner of war, when the fortress of Przemyzl in Galizia (Austrian Poland) was taken by the Russians.

Danish Vienna Bread

(2 qt. dough ; Quarter sponge, 25 per cent ice; Shea butter)

Make a smooth batter sponge and let it get ripe with :

1 pt. milk 95 deg. F.	4 oz. raw sugar
10 oz. yeast (fast)	4 oz. malt extract
1 lb. flour	

Doughing up with :

1 pt. cold milk	14 oz. margarine
22 oz. crushed ice	1 oz. rum
1 pt. eggs	Zest of 2 lemons
1 $\frac{1}{4}$ lb. sugar	$\frac{1}{2}$ oz. cardamom
1 oz. salt	10 to 11 lb. flour

Throw the crushed ice into the ripe sponge, add the whisked-up eggs, sugar, salt, milk, the lemon zest, rum, and spice, and mix into a smooth but not-too-slack dough with the margarine. Fold and brake and let rest for 30 min.

For rolling in allow 3 oz. of shea butter to each pound of basic dough. Roll out, cover half the paste sheet with shea butter pats, cover up and give another half turn. Rest in refrigerator overnight and proceed as described.

Straight Plunder Paste with Oil

15 lb. national flour	1 lb. 2 oz. groundnut oil
3½ oz. baking powder (2:1)	¾ oz. salt
5½ pt. cold milk	Spice
2 pt. eggs	Egg colour (half madeira bun cupful)
1½ lb. sugar	Rum, or rum essence

Mix into a smooth pliable dough, adding the oil when the flour has disappeared. Let it rest for ½ hr. and for every 1 lb. of basic dough allow 3½ to 4 oz. butter, nut butter, or conditioned pliable cake margarine.

Work the fat with some flour into a half-finger-thick slab about 10 by 6 in. ; fold into the dough piece as for making puff paste by French method. Give a half turn and follow up with book fold. Rest in refrigerator or on ice for 1 hr. or overnight. Give a final half turn, let it rest for short time, then work off.

Emperor Francis Joseph's Favourite Yeast Cake

(Kaiser Guglhupf)

1¼ lb. Hungarian flour	14½ oz. butter
14 oz. full cream milk	⅛ oz. salt
3½ oz. yeast	5 oz. sultanas
10 whole (shell) eggs	Zest from 1 lemon
3½ oz. sugar (fine castor or icing)	Dash of rum

With some of the milk (warmed), sufficient to dissolve the yeast and ½ oz. of sugar, use enough flour to make a thin batter sponge. Put in a warm place to get quite ripe. Meanwhile, cream the butter with the sugar and add gradually and alternately one egg and some flour. Finally, add the ripe sponge, taken when on the point of dropping, the salt, lemon rind, the balance of the milk (lukewarm), and the flour. Beat up well in a basin or bowl with a spatula. Give a good beating and slapping. Last thing, mix in the sultanas.

The dough should be slack.

Fill as a cake batter, into two or three buttered and floured Turks head shapes, with a funnel in the centre, half full. Give full proof and bake on hot baking sheets in a medium heat for 45

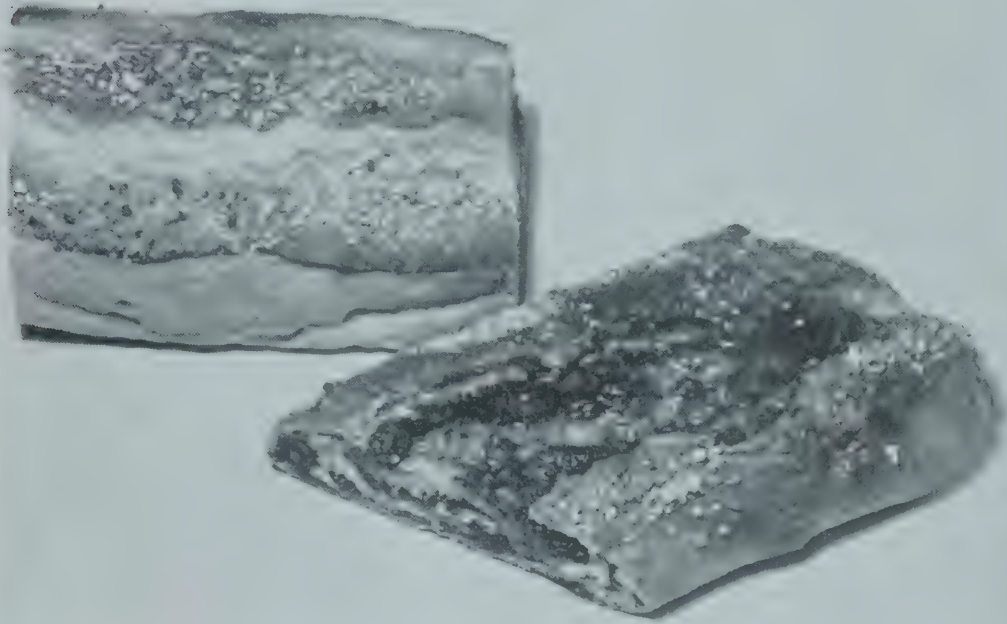
min. When baked turn out immediately and dredge with vanilla icing sugar.

Danish Pastries

(2 qt. *straight dough*)

2 qt. full cream milk	1 $\frac{3}{4}$ lb. butter
90 deg. F.	2 oz. cardamom
12 oz. yeast (fast)	1 $\frac{1}{2}$ oz. salt
1 $\frac{3}{4}$ lb. sugar	Zest of 2 lemons
1 qt. egg yolks	9 to 10 lb. "Millenium" type flour

Mix a straight dough but do not fold and brake. Let it rest for 30 min. then fold up well and put in to refrigerator. When properly chilled, use 4 to 5 oz. butter to each pound of basic dough. Proceed as described.



Embassy
(*Plunder Paste*)

Prince of Wales
(*Vienna Brioche Dough*)

Unsweetened Plunder Dough

(for savouries, etc., 2 qt. dough and paste)

Dough and paste are made, stored, and treated exactly as for the sweet plunder or danish pastries. This paste is used for sandwich rolls, croissants, and articles of a savoury nature.

Sponge :

1 qt. full cream milk 95 deg. F. 1 oz. sugar
9 oz. fast yeast or up to 1lb. normal 1½ lb. flour

When ready, put 8 eggs into a quart measure and fill up with cold full cream milk. Pour into the sponge, add 3 oz. sugar, clear the sponge, and mix with 6½ lb. flour, 1½ oz. salt and 6 oz. fat into a firm dough. Let it recover and allow 4 oz. butter to each pound of basic dough. Proceed in the known manner.

In France and Belgium, this paste is used for making finger-shaped rolls by rolling them up as for crescents but keeping them straight. Proof in dry warmth and bake.

In restaurants, cafes and homes these rolls are cut into two and sandwiched with butter, foie gras, ham, anchovies, etc. For this shape, the paste has to be cut and weighed as near as possible for the heads to go through the bun divider at 30 or 36 pieces : 2¾ lb. for the 30 section divider will be right.

Pin the cut pieces as for short crescents. Roll up on a cloth strip with a rough surface and put on baking sheets without bending.



Prince of Wales Slices

For crescents or croissant parisien bend the pieces and proof in dry warmth.

Proceed as with puff paste for cream horns, roll on to wooden sticks, bake, and fill with foie gras, creamed-cheese fillings, etc.

The rolls have to be small because of their purpose. They can be sold to customers unfilled. Very small croissants filled with minced chicken breast or turkey, flavoured with chutney, are called Croissant Epicure.

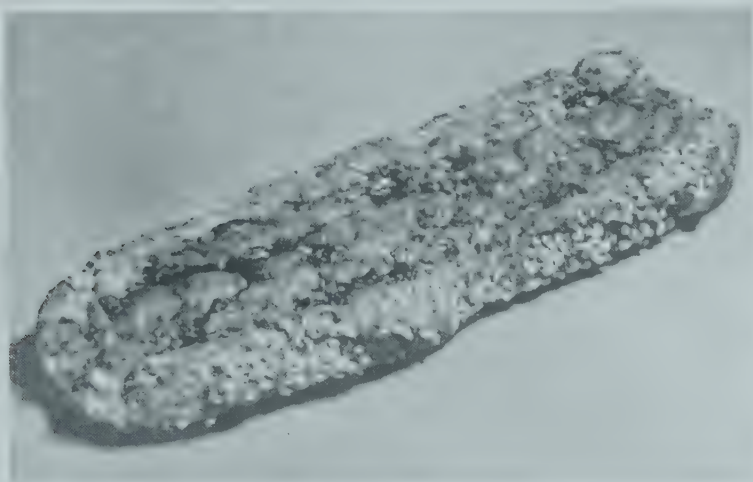
Prince of Wales Roll and Slices

In 1908, I introduced at Brown Brothers Cafe Ltd., Weston-super-Mare, this roll which I had evolved from the German "Bismarck". I altered the combination of ingredients of the "Bismarck" somewhat, and its finish, by cutting the surface of the roll, thus showing beautiful symmetrical lines when baked. Whilst still hot, I brushed the roll with hot apricot puree or red currant jam and intermingled with white fondant : a novelty was born.

Wherever I made this speciality it became popular immediately.

Weigh 1 to 1½ lb. pieces of Vienna brioche dough or plunder paste. Pin out as for chelsea buns, spread ¼ in. thick with Vienna almond cream filling flavoured with rum or orange flower water, and sprinkle liberally with sultanas, chopped orange peel, and almond nibs. Roll up without tapering the ends, seal the one long side, and have an uncovered ½ in. seam on the roll. Put two or three rolls on each greased baking sheet, leave space for proofing and keep rolls straight. Egg-wash and proof in dry warmth.

Before baking, egg-wash for a second time and cut with thin sharp knife from end to end, nearly to the centre of the roll. Dredge both sides with almond nibs, flaked almonds, or streussel topping and bake at 410 deg. F.



Prince of Wales Roll

When drawn, brush hot apricot puree or red currant jam over the surface and run a line of fondant over the jam : intermingle with a palette knife to obtain a mottled surface.

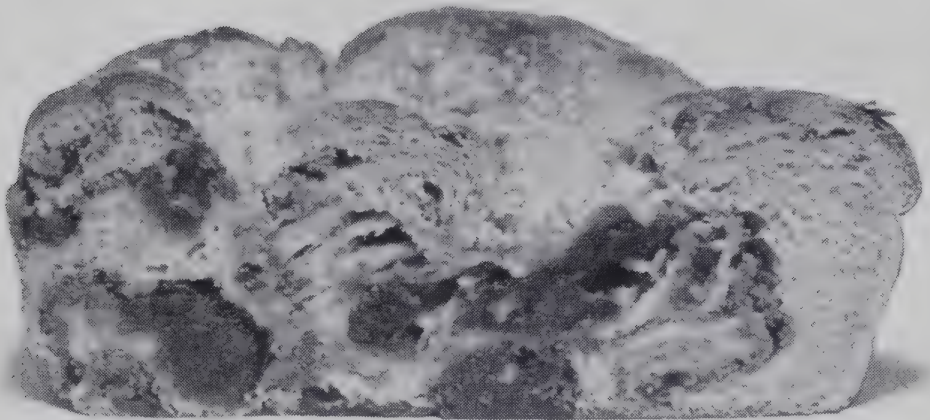
Sell by weight or cut slices slantwise.

The roll may be finished off with fondant only.

If sold by weight, in 4 oz. pieces, make incisions with a palette knife or Scotch scraper immediately the rolls are placed on the baking sheets to proof.

Almond Wreath

Pin out 8 oz. to 1 lb. pieces of paste as for chelsea buns ; spread a layer of Vienna almond cream filling all over except $\frac{1}{2}$ in. along one long side which has to be brushed with egg glaze. Sprinkle liberally with sultanas and currants. Seal up the end by gently pulling and pressing on to the roll with the finger-tips, finish by tapering both ends. Turn the roll with one end pointing away from, and the other towards, you. Cut with a sharp knife from the middle of the roll right down to one point into halves, and twist them like a rope, sealing the ends. Turn the twisted half of the roll over and get the uncut half in the same position as the twisted one was at first. Repeat the cut towards the pointed end and finish the roping. Put this rope-like roll on to a baking sheet forming a ring or wreath-like shape and seal the two ends firmly : they can be left apart, making a large crescent shape.



Danish Crown Flan

Larger paste pieces may be treated in similar manner but do not taper the ends. Place the roped rolls in a straight position along the length of the baking sheet. Wash with eggs immediately after shaping and proof in a dry and not-too-warm place. Give full proof, egg-wash again, sprinkle with flaked almonds, and bake at 420 deg. F. When drawn, brush with water icing or fondant into which a small amount of cornflour has been stirred. To 1 lb. icing, allow 1 oz. cornflour and a few drops of rum or vanilla essence. Sell by weight.

Basic or brioche dough may be used.

American Coffee Ring

Grease a large flan shape or ring with a $1\frac{1}{2}$ or 2 in. edge and a diameter of $6\frac{1}{2}$ in. Into its centre put an inverted small madeira bun cup or well greased tin and lay the almond wreath, 9 oz. in weight, round it, joining the two ends by laying them over each other. Wash and proof as mentioned above ; dredge with flaked almonds or leave plain. Bake and, when drawn, turn the coffee ring carefully out of the shape or lift it off the flan ring and remove the metal cup. Thus an attractive ring is obtained without going to the expense of buying special shapes. The baked product is sold or served plain or dredged with vanilla icing sugar.

Basic or brioche dough may be used.

Danish Crown

Pin out 9 oz. paste pieces to about 12 in by 8 in., spread thinly with Vienna almond cream filling prepared as follows : stir into 1 lb. filling, 6 oz. roasted and finely ground hazel-nuts, $\frac{1}{4}$ oz. ground cardamom, $\frac{1}{2}$ oz. ground cinnamon, and 1 oz. (1 tablespoonful) of rum. Sprinkle liberally the spread surface with sultanas. Roll up 16 in. long, taper, cut, and twist as described. Roll into a coil shape and into an oiled or greased gateau tin $6\frac{1}{2}$ in. in diameter at the top and $4\frac{1}{2}$ in. at the bottom. The baked cake will weigh approximately 12 oz. and appears to be larger than its weight.

Egg-wash, proof in a dry warm place, glaze with eggs again before baking and pipe a coil with cold, boiled vanilla custard on top. Sprinkle with coarse streussel topping. When drawn, remove from pans and give few dashes of rum-flavoured water icing or thin fondant with a brush.

Basic or brioche dough may be used.

Dutch Crown

Pin out 9 oz. paste pieces as for Danish crown and spread with following mixture : stir into 1 lb. of Vienna almond cream filling, 2 oz. sponge cake crumbs, one tablespoonful of coffee essence, and one teaspoonful of brandy. Sprinkle the spread with chopped roasted hazelnuts, roll up, and taper. Bring the roll, about 16 in. long, alongside the edge of the table, flatten gently from end to end and with a sharp knife make incisions in intervals of $\frac{1}{8}$ in. from point to point, cutting right down to the table up to one-third of the roll. Curl up with the teeth cuts to the outside (on the right-hand of the operator) and put the crown shape into the same size pans as mentioned above. Glaze with eggs and proof in a dry, warm place. Pipe boiled custard, coil pattern, on top between the



Danish Crown Flan or Cake

furrows or ridges, bake, and remove from pans when drawn. With a soft-haired brush apply a little thin coffee fondant.

Basic or brioche dough may be used.

Princess Marina Flan

Pin out 9 oz. paste pieces as described and spread with following mixture : stir into 1 lb. Vienna almond cream filling, 3 oz. of melted block chocolate or couverture and flavour with a few drops of best vanilla essence. Sprinkle liberally with almond strips and vostizza currants. Shape into a tapered roll about 24 in. long. Roll up in a coil and put into a flan shape. Wash with eggs, proof, and wash again as above. Sprinkle with almond strips and bake.

When drawn, remove at once from pans and sift vanilla icing sugar over the top.

Basic or brioche dough may be used.



Princess Marina Bun

Dragon Teeth or Combs

Pin out 6 or 9 oz. pieces as above and spread with plain Vienna almond cream filling. Sprinkle with sultanas and currants. Roll into even cylindrical shapes, but do not taper. Bring close to the table and cut "teeth-like" incisions as for the Dutch crown. Bend at the middle and push the two unsevered parts together. Put on baking sheets, wash with eggs, proof dry, and wash a second time. Pipe a straight, but thicker, line of custard between the joint, and sprinkle the surface with streussel topping. Bake at 420 deg. F.

Vienna Marzipan Bun

This confection is known under the name French or Belgian bun.

Roll out paste as for chelsea buns, spread with Vienna almond cheese filling, leaving $\frac{1}{2}$ in. uncovered along the side : this will be

egg-washed. Sprinkle liberally with sultanas and flaked or chopped almonds, roll up and seal well with the egg-washed part by pulling gently with the finger-tips towards the body of the roll. Roll into a cylindrical shape, and cut into slices about $\frac{1}{2}$ to $\frac{3}{4}$ in. wide, according to selling price. To fold the close or end underneath the bun I consider superfluous and results in an unsightly shape. These buns can be baked in shallow tin shapes if so desired.

Wash twice with eggs, sprinkle with nib or flaked almond or with streussel. When baked, brush with hot, thinned apricot puree (but not the streussel-topped variety) and brush with water icing, thin fondant or special Vienna icing. Another variety of finish can be obtained when baked and still hot by spreading a spot of apricot or raspberry jam on top of the bun with a palette knife and intermingle with a drop of water icing or thin, rum-flavoured fondant.

Always remove from the baking sheets immediately when finished and place on wires or into boxes.

If desired the basic dough can be used.

Hungarian Plunder Paste

4 lb. flour	1 lb. sugar
$4\frac{1}{2}$ oz. yeast	8 eggs
$\frac{1}{2}$ oz. salt	$1\frac{1}{2}$ pt. cold full cream milk

Make into a smooth but not-too-slack dough. After recovery, pin out rather thin and roll in, as for Danish Vienna bread paste, $2\frac{1}{2}$ lb. butter worked to a paste with 1 lb. flour. Give this the usual turns and rests in the refrigerator or ice box.

Work into kollatschen shapes and fill with Vienna sweet curd filling.

Hungarian Brioche Dough

5 lb. flour	$\frac{3}{4}$ pt. eggs
$\frac{1}{2}$ lb. yeast	1 lb. sugar
1 pt. cold single cream	$\frac{1}{2}$ oz. salt
$\frac{3}{4}$ pt. yolks	3 lb. butter

Make a straight dough and let it rest for a few hours in an ice box or refrigerator. Work off into brioche and other fermented goods as enumerated above.

Enrobed Apple Pastries (with rum)

Pin out plunder paste and cut into suitable sized rounds. Core and peel small apples, sprinkle them with rum, roll in castor sugar, and put on to paste squares. Fill every apple with sweet,

preserved cranberries or red currants, envelope with the paste, and place on top, where the paste ends are sealed, a small piece of paste cut with a crinkled cutter. Let proof for 20 min., egg-wash, and bake in a sound oven. About 5 min. before being baked, draw the baking sheet, and dredge the apple tops with sugar, then finish baking.

Vanilla Custard Flan

Pin out cuttings of the paste in same manner, add sultanas, as for Nott's roped fingers, keeping the paste $\frac{1}{2}$ in. thick. Cut into 5 oz. pieces, pin round and put into flan rings or shapes 6 in. diameter. Wash twice with egg. Proof in a dry, warm place and before baking pipe a lattice pattern with boiled custard. Bake in a sound oven.

Streussel Flan

Prepare paste as for custard flan, put into flan rings or shapes, wash with eggs, and cover with a liberal layer of streussel topping. Let proof in a dry, warm place and bake in oven at 410 deg. F.

Apple Flan

Weigh off 5 or 6 oz. paste and pin out $\frac{1}{3}$ in. thick. Place 2 oz. cake crumbs in the centre, add some stewed and chipped or tinned apples putting them evenly over the crumbs, dredge with sugar, add a few sultanas and a pinch of cinnamon. Fold the edge of the paste over the filling, as for eccles cakes, and proof in flan rings or shapes in a warm, dry place. Wash twice with eggs, pipe a spiral of boiled custard on top, and bake.

Schuberts

Proceed as for Vienna marzipan buns, but make the diameter of the cylindrical roll smaller and the pieces longer. Put them into crinkled paper cases rested in small hoops or small plain madeira bun tins. Proof in dry, warm place, wash twice with egg glaze, and dredge with almond nibs, flaked almonds, or pipe a ring of boiled custard round half a glace cherry.

This is a very attractive teatable fancy tartlet, when served or sold in the paper case.

Fred Nott's Roped Fingers

Pin out cuttings of the paste into an oblong sheet, sprinkle liberally with sultanas, and give it a half turn. When recovered, pin out to $\frac{1}{8}$ in. Cut strips $\frac{1}{4}$ in. wide and about 6 in. long. Bring two ends of each strip together and roll up like a corkscrew. Place



Vienna Kranzkuchen (Wreath)

American Coffee Ring

them into rows side by side alternating the point and bend of the rolls. Let every row across the baking sheet touch the next row of rolls. Wash with eggs and, before baking, sprinkle with nib sugar or flaked almonds. When baked, dredge the almond sprinkled variety with icing sugar.

Baking should take place with a drawn damper to prevent the nib sugar from melting. Sell in pairs which can be easily separated from one another.

Walnut Crescents and Fingers

Weigh off a piece of paste about $2\frac{3}{4}$ lb. for 36 crescents. Shape the paste carefully round to fit into the pan of the bun divider. Dust well on bottom and top and cut out. Brush the flour off and pin the pieces into oval shapes, as near as possible, about $\frac{1}{8}$ in. thick. Lay the pieces side by side and put on every one $\frac{2}{3}$ oz. of walnut filling. Fold one half of the oval piece over the walnuts and press the edge down with the finger-tips. Roll the filled part over the plain and make boat shapes. Put them on oiled or greased baking sheets, bending them into crescent shape or straight, as fingers. Egg-wash and proof in dry, warm place. Before baking, egg-wash once more and rip the surface of the crescent or finger with a sharp and pointed knife $\frac{1}{2}$ in. long to allow the walnut filling to break through the skin of the crescent during baking.



Vienna Brioches Crescent

After baking and while still hot, brush with rum-flavoured water icing or fondant.

Instead of walnuts, roasted and ground hazel-nuts or a mixture of both makes a most pleasant eating filling.

Danish Pastry as made in Denmark

(1 *gall. dough*)

1 gall. lukewarm (full cream) milk	18 whole (shell) eggs
16 to 17 lb. flour (variable)	2 lb. sugar
2 lb. fast yeast	Pinch of salt
	2 oz. cardamom
2 lb. butter (for rolling in)	

Straight dough method. Whisk the eggs with the sugar, dissolve the yeast and mix into a pliable dough. Roll in the butter in the size of hazel-nut pieces. Rest in refrigerator between the turns.

Copenhagen Wiener Brod

(1 *gall. dough*)

1 gall. lukewarm milk	Pinch of salt
1 lb. yeast	2 to 4 oz. cardamom
1 lb. sugar	18 whole (shell) eggs

Dissolve the above and whisk together, then make into a smooth dough with 16 lb. flour. Allow to recover and, using 8 oz. of butter to every 1 lb. of dough, roll in and lay up in refrigerator between turns, before working off. Proceed as usual.

CHAPTER XVII

THE CAKE OF THE SAXONS (STOLLEN)

Christmas stollen have a religious and historical background. They are of Saxon origin ; Dresden and Leipzig and other towns of Saxony export this speciality to all European countries and even overseas. The extraordinarily rich nature of the stollen makes this possible.

Not only at Christmas do we find stollen on the counters and tables but they are there throughout the year on Sundays and other festive occasions.

Folklore tells us that the shape resembles the crib of the child Jesus.

Weeks before Christmas, the pastrycooks of Saxony, Austria, and the German-speaking part of Switzerland begin baking Christmas stollen.

It used to be an historical custom to present the king's stollen at Christmas to the Royal House of Saxony.

In 1692 the Baker Journeymen Brotherhood petitioned the Elector Prince of Saxony to grant them the old privilege of their annual procession at Christmas, by charter. On December 20, 1692, the Elector Prince decreed to his magistrate, Sigismund Leistner, in view of the fact that the rights of the Baker Journeymen Brotherhood dated very far back, their annual procession be permitted and that the procession should take place every year on December 28. The decree further stated that the Court Food-Marshal, Johann Christian Meister, had to make a gift of one bushel of wheat to the Brotherhood at New Year, from which three large stollen had to be baked.

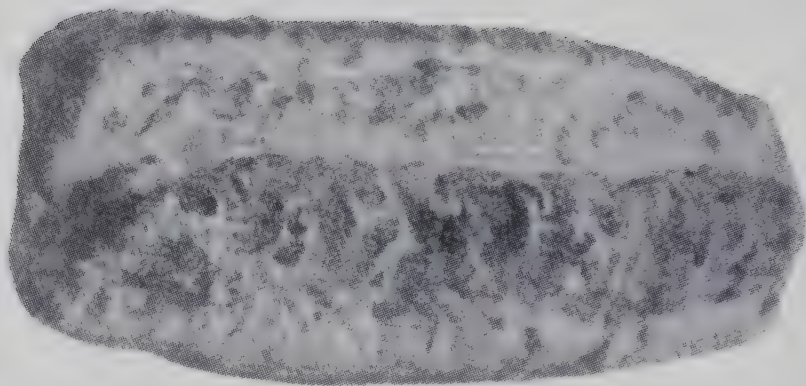
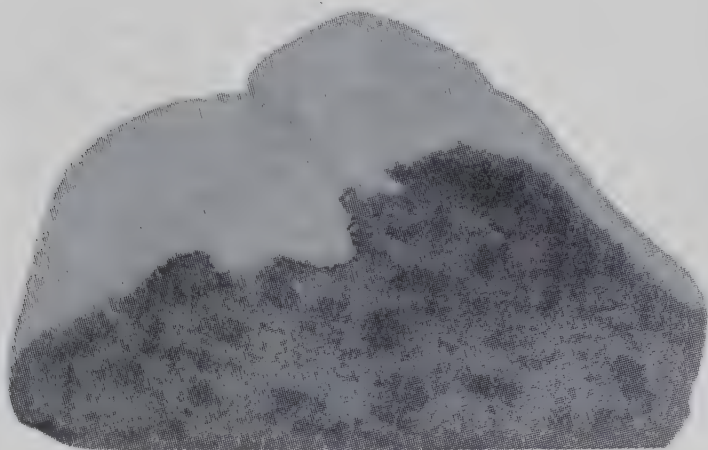
On December 28, 1727, Elector Prince Frederic August I. gave a standard to the Brotherhood and until 1827 the procession took place every Christmas. The Seven Years' War interrupted this custom.

With great pomp the centenary was solemnised until, unfortunately, the jolly journeymen bakers clashed with the military guard on the Wilsdruffer Tor in Dresden. After this incident, the Brotherhood seems to have had enough of processions.

The Baker Journeymen Brotherhood was dissolved and the Master Bakers' Guild took over the annual presentation of the

Christmas stollen to the king. Authentic records show that until 1915 this ancient custom was upheld.

It is of interest to know that each of the king's three stollen was 3 yards long and they were made and baked under the supervision of the Obermeister of the Guild. They were carried by six journeymen and six masters and presented at the castle. The stollen were cut and a grand dinner was the conclusion of the ceremony.



German Christmas Stolle (Saxony)

In these difficult days of low price limits and shortage of everything, the baker and the public need something good and, after a trial, cause them to return for weeks to get their fermented cake.

Let us hope the day is not too far off when we can produce the best and get the price the public is only too willing to pay. There are three distinct classes of stollen, namely, almond, fruit

(raisins, sultanas, and peel), and marzipan stollen. Hundreds of so-called original Dresden or Leipzig stollen recipes are in existence ; this is only natural.

The formulae I give are reliable and I can vouch for them. There are two shapes of stollen—the German or Saxon and the Viennese or Austrian. Stollen are not difficult to make. There is a ready market for them amongst the numerous emigrés from foreign lands who are prepared to pay any price for the rich and heavily-fruited kinds, though my austerity stollen is as good as a feast.

Everyday (Austerity) Stollen

4 lb. national flour	8 oz. compound fat, lard, or cake margarine.
1 oz. baking powder	
1 qt. cold water	8 oz. sugar
5 oz. yeast	8 oz. sultanas and currants
$\frac{3}{4}$ oz. salt	Stollen spice
4 oz. dried egg	A few drops of rum and
4 oz. dried milk or substitute	lemon essence

Straight dough method. Dissolve the dried egg, milk powder, sugar, and salt in the water. Disperse the yeast in $\frac{1}{2}$ pt. cold water, pour both solutions together, add the essences and spices, draw in the flour, and mix into a dough. When all the flour disappears, add the fat and fruit and mix well to a medium dough. When finished, brake the dough well with the forearm. Dust up and rest in a warm place for about 45 min. Give it a knock back by folding and braking the dough with the forearm. This is important to develop good texture in the finished product. The temperature of the dough should be 70 deg. F.

After a further 20 min., scale into 9 oz. pieces, mould them round, set beside each other, let them recover, and mould round once more. This is one of the dogmas, not only of Viennese bakers, but also of the master craftsman. The late Mr. Archibald Kirkland (Archie McPistor), of Irvine, said at one of his lectures "that handling up twice may be a sin against time, but surely not against good workmanship."

When the round dough pieces have recovered sufficiently, take one after the other and manipulate in the following correct way, which will result in the beautiful Vienna stollen shape.

Pin out by pressing the rolling pin down the centre and roll, pressing all the time, to and fro four to five times. Thus an elliptical shape is obtained of about 6 in. long and $3\frac{1}{2}$ in. wide. The pinned-out part will be $\frac{1}{8}$ in. thick and 4 in. long. Both ends of the shape remain untouched, resembling rather thick lips. Put the rolled-out pieces side by side in rows on the table and brush the thin centre

part with melted butter. Vienna pastrycooks do not fill stollen. But in other lands other customs prevail. A craftsman has his whimsies and for small stollen, which are consumed the same day they are baked, I found the customers appreciate a surprise. Therefore, I spread them with a little Vienna almond cream filling, flavoured with orange flower water.

To give the Vienna stollen its final shape, fold one lip towards the other and on top of it. Press the finger-tips down near and below the lips, thus pulling them somewhat asunder. Finally, lift each stollen, by holding the two thin now-pointed ends, and put them on the greased baking sheet with a simultaneous pull to the right and left, thus bending the points away from the operator towards the lips. The shape will be like a waning moon. Allow space for proofing and do this in a dry, warm place. Small stollen may be egg-washed and, when baked, touched up with a little fondant or, if not, dredged with icing sugar, but do not apply egg glaze.

Bake at 410 deg. F. Do not overbake.

Larger, heavily fruited stollen, rich with butter content, are usually baked on the oven sole at 380 to 400 deg. F. When drawn and still hot, brush them with butter and dip into vanilla-flavoured icing sugar.

The Saxon shape is moulded like a bloomer after handing up. After recovery, the rolling pin manipulation is applied as above described, but the stollen is kept straight and not turned on the ends. Leipzig and Dresden stollen are twice the length of the Vienna type. The illustrations show the two types clearly.

Vienna Stollen with Soya

(1 gall. dough ; as made in Vienna, 1928)

2 qt. water 104 deg. F.	1 lb. processed soya flour
3 lb. flour	1 lb. yeast
	2 oz. sugar

Make into smooth batter sponge and let it get quite ripe. When on the point of dropping, dough up with :

2 qt. cold, full cream milk	4 oz. rum
3 lb. sugar	Zest of 3 lemons
8 yolks of eggs	1½ oz. bitter almonds
1½ oz. salt	3 oz. stollen spice

Whisk the above together and add :

3 lb. softened butter	14 lb. flour (variable)
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Mix into a rather firm dough, let it rise for 1 hr. in a sheltered, warm place, then flatten out the dough by braking with the forearm. Fold and brake into it :

5 lb. sultanas
2 lb. currants

1 lb. almond strips or nibs
1 lb. citron peel strips

Let it rest for another hour. Knock back and weigh off into 8 oz., 1 lb., or 2 lb. pieces. Hand up and mould round after recovery. Proceed as described above with rolling pin operation, shaping, proofing, baking, and finishing when baked.

Dresden and Leipzig Stollen

The most important point is the fermentation of the dough, which is the heaviest-fruited and one of the richest in butter and sugar of all yeast-raised doughs. For this reason we need a very active and short fermentation process. To every 1 lb. flour about 1½ oz. yeast are necessary to guarantee success. Without a doubt, the large amount of yeast contributes to the mellowness of the crumb. All the ingredients should be of the same temperature as the bakehouse.

Invariably, one-third or one-half the flour quantity is sponged with sufficient milk to make a firm sponge. Butter, sugar, and eggs (if any at all) have to be creamed as for a sugar batter in cake-making. Salt, spices, and ground almonds are incorporated last. When the sponge is ripe, add the rest of the milk, clear it well to a smooth homogeneous mass and mix into a firm dough with the balance of the flour. Sultanas, currants, cut peel, and shredded almonds, etc., are added just before finishing the mixing manipulation. Brake in well with forearm, dust up, and let it rest in a warm place.

As soon as the dough shows signs of life, begin to weigh off into 1, 2, or 3 lb. pieces and hand up twice. After recovery, mould into cylindrical shapes.

Many bakers and pastrycooks prefer to begin, after mixing the dough, immediately with weighing the dough pieces. Personally, I adhere to my traditional one knock-back in bulk before I start with scaling off. Manipulation with the rolling pin begins after handing up and moulding into cylindrical shapes, but the thin, rolled-out space between the two bulky "lips" is not wider than 2 in. Brush with melted butter and proceed as described above.

Proof the stollen on the baking sheets about 20 min. and bake in medium heat (400 to 410 deg. F.). If steam is available, use it until the goods reach their full size. Turn off the steam and finish in dry heat. Stollen baked in a Vienna oven with sloping sole will



Vienna or Austrian Type (or shape) Stollen

Dresden Stollen

be first-class goods, provided they are set in such a way that their thick "lips" are facing towards the back of the baking chamber.

After baking, brush the stollen twice with melted butter to retain a soft crust. Cool, and dip them in vanilla icing sugar, covering the whole piece with a thick coat of sugar, or brush the surface with thinned fondant into which a little cornflour has been stirred (1 oz. cornflour to 3 lb. fondant).

Quality firms in Dresden and Leipzig used to wrap their specialities in transparent paper with the firm's name in gold print.

Original Dresden Christmas Stollen

10 lb. flour	8 lb. sultanas
2 $\frac{3}{4}$ pt. milk	1 lb. citron and orange peel (chopped)
$\frac{3}{4}$ lb. yeast	4 oz. bitter almonds (ground)
1 oz. salt	2 $\frac{1}{2}$ oz. stollen spices
4 lb. butter	Zest of 2 lemons
1 $\frac{1}{4}$ lb. sugar	2 oz. rum

Sponge 3 lb. flour with 2 pt. milk at 100 deg. F., 12 oz. yeast, and 4 oz. sugar. Let it ripen, then add the balance of the milk, the creamed-up broken sugar, salt, spices, rum, and almonds and make into a good dough. Lastly add the fruit by folding in.

Almond Stollen

10 lb. flour	3 lb. chopped and flaked almonds
2 $\frac{3}{4}$ pt. milk	4 oz. bitter almonds (ground)
12 oz. yeast	1 $\frac{3}{4}$ lb. citron peel (strips)
1 oz. salt	2 $\frac{1}{2}$ oz. stollen spices
4 $\frac{1}{2}$ lb. butter	Zest of 2 lemons

Proceed as previously described. Spinging milk should be 100 deg. F.

Marzipan Stollen

(Uhl Breunig-Carlsbad)

10 lb. flour	2 $\frac{1}{2}$ lb. marzipan
4 pt. milk	2 $\frac{1}{2}$ lb. sultanas
10 oz. yeast	2 lb. citron peel (strips)
1 oz. salt	2 $\frac{1}{2}$ oz. stollen spice
$\frac{3}{4}$ pt. eggs	2 oz. rum
4 lb. butter	Zest of 2 lemons

Sponge with 2 pt. milk at 100 deg. F. and proceed as above.

Vienna Christmas Stollen

(Uhl-Breunig, Imperial Court Baker)

28 lb. flour	4½ lb. sugar
11 pt. milk	8 lb. chopped almonds or strips
2¼ lb. yeast	14 lb. sultanas
3 oz. salt	5 lb. citron peel (strips or chopped)
1½ pt. yolks	Zest of 5 lemons
12 lb. butter	4 oz. rum

Sponge 8 lb. flour with 5 pt. milk at 100 deg. F., let it ripen, and mix into a dough when sponge is on the drop. Give two knocks back and proceed as described for Austerity Stollen.

Without exception, the stollen are covered with vanilla icing sugar.



Vienna Stollen

Dresden Stollen

(another good recipe)

3 lb. "Millenium" type flour	2 pinches of mixed spice
1¾ pt. milk	Zest of lemon
4½ oz. butter	Tablespoon of rum
4½ oz. suet	2 oz. citron peel
9 oz. sugar	¾ lb. sultanas
9 oz. split almonds (shredded)	5½ oz. yeast
9 oz. bitter almonds (ground)	⅜ oz. salt

Method :

Make sponge with ¾ pt. warm milk at 100 deg. F. When ripe add the remainder of the milk at 100 deg. F. Clear sponge and make

a pliable dough. The butter, melted and warm, should be added when the dough begins to cohere. Add the rum and zest at the end of mixing. Let it rise once and scale off at 2lb., 1lb., and 8oz. Proceed as normal.

Manx Flan

During the second world war when I had a bakery of my own in Manchester, a shortage of sugar, butter, and eggs, made me create novel fermented pastries and cakes ; the Manx flan was one of them. It consisted of three stollen put in a certain way into a flan ring or shape. To make it proceed as follows :

Weigh off 3 to 5 oz. brioche, or a rich basic, fermented, well fruited dough, proceed as described for Viennese stollen shape, and put them into a flan shape ring, or sponge cake tin 6 in. diameter. The thin part of each stollen should lie closely against the side of the flan tin, the ends of each piece touching one another. The bulge-like part of the stollen join should be in the middle of the flan tin. Egg-wash twice and pipe three symmetrical semi-circles of cold boiled custard with a paper cornet between the space or ridges where the three stollen touch each other. When baked, ice with thinned fondant or water icing. The custard design in the centre of the flan resembles the three legs in the coat of arms of the Isle of Man. It can be easily broken into three equal cakes or cut like a loaf.

Leipzig Stocking Soles

Use any one of the Viennese brioche doughs or basic dough for Danish pastries : it is a matter of price.

Weigh 3 lb. pieces for one head of 30 through the bun divider. Mould round, dust and shuffle. Let recover and pin out with a rolling pin, level oval shapes about 4 in. long. Place on well greased baking sheets, brush with egg, and sprinkle with streussel topping. During the season, halved plums and streussel will make a quite intriguing novelty.

Imperial Streussel Cake

4½ lb. flour	½ oz. salt
Yolks	1 lb. castor sugar
Sufficient milk	1¾ lb. butter
	¼ oz. lemon zest

Make a sponge with ½ pt. milk (lukewarm), 6 oz. flour, and ½ oz. sugar. When ripe, mix into a medium dough. Let rest for ½ hr. then scale off and pin out the pieces in rectangular shapes, ¼ in. thick, to cover baking sheets and/or flan shapes or rings

(shortbread rings). Let proof, brush with melted butter, then thickly with streussel topping. Bake at about 400 deg. F. to a golden brown. Watch carefully lest the topping gets "touched" if necessary manœuvre the damper. When drawn, dredge with vanilla icing sugar.

Special Streussel Topping

Boil 2 lb. butter carefully and let it rise up twice. Pour the butter, separated from the sediment, into a bowl on to 2 lb. castor sugar, 1 oz. ground cinnamon, and $\frac{3}{4}$ lb. ground almonds. Stir well. Finally add $1\frac{3}{4}$ lb. to 2 lb. flour. Rub this well together into a more or less fine and coarse crumby mass.

CHAPTER XVIII.

THE STRUDEL-ROLL

On the eastern slopes of the Vienna forest, about twelve miles south of the capital, amidst vineyards, squats the idyllic village Rodaun. Its chief attraction for the natives and the tourists was, at one time, the famous Restaurant Stelzer, noted for the exquisite cuisine and dream-like wines.

One of the most exalted worshippers at this European shrine of Gourmets was Crown Prince Rudolf of Austria, in the 'eighties when on his drives with his coachman, Bratfisch, to his hunting lodge at Mayerling, Rudolf never missed the opportunity of enjoying Stelzer's unrivalled creation—a sweet dish—Milli Rahm Strudel (milk cream pastry).

The strudel—a typical Austrian sweet pastry—is of cylindrical shape 10 in. or more long, and 3 to 5 in. diameter.

Every housewife of the former Austro-Hungarian Monarchy (comprising ten or more nationalities) prided herself on being able to make strudel filled with apples, apricots, cherries, plums, red currant jam, milk, cream curd, etc. The stretched or pulled dough base for the apple, apricot or plum strudel is regarded as the most delicious and distinguished member of the whole family, and the most difficult to make. The fame of the Viennese apple strudel is known throughout the world among the lovers of good food.

Usually the strudel is cut into 2 or $2\frac{1}{2}$ in. slices and laid out for sale. Customers who wish to eat them on the spot, as is the custom in Austria, are handed a silver fork, with dish, to help themselves, or are served by neatly-dressed, polite, and well-trained girls who handle every article with silver prongs and forks. This is just by the way, and I have recalled this custom for sixty years.

In all cafes, buffets, and restaurants, strudel are on sale. Here, in Great Britain, pastrycooks and confectioners will find in strudel a good selling, profitable, and easily-made novelty for even their most fastidious customers. The cafe owner and caterer can serve strudel cut in portions, as a warm sweet dish, about thirty portions being cut from three strudel baked on one baking sheet. Now for the formulae and methods of making.

Viennese Stretched and Pulled Strudel Dough

2 $\frac{1}{4}$ lb. flour

8 oz. butter, lard, or margarine

$\frac{1}{3}$ oz. salt

About 1 pt. of water (lukewarm)

Sieve the flour, make a bay, and put into it the salt, lukewarm water, and melted (not hot) fat. Make a very slack dough, giving it a good beating with the hand until the dough is a smooth and slack-silky mass showing air bubbles. Cover the dough, placed



Strudels, made from Plunder Dough

in a bowl or basin, and let it rest $\frac{1}{2}$ hr. or even overnight. Larger doughs may be set aside in a cool place or in a refrigerator for one or two days ; the dough is then ready when a sudden order is given.

Final Manipulation

Cover a table which is accessible from all sides with a clean cloth, dusted slightly with flour, and put a suitably sized piece of dough, say 1 lb., in the centre of it. Dust with flour, pin out to finger thickness, brush with melted fat or butter, and gently pull

the dough piece with both hands into a thin sheet by putting the finger-tips underneath the paste, pulling all the time and moving the finger-tips around the dough. Gradually the dough sheet will cover the whole table. One should be able to read a newspaper placed between the dough sheet and the table cloth, but the dough sheet must not be broken.

In pre-war days, chefs and pastrycooks used only the best quality flour, *i.e.* Hungarian or "Millenium" types, flours with an elastic gluten. The addition of lecithin, say $\frac{1}{2}$ oz. to $2\frac{1}{4}$ lb. flour, is a great help, because it imparts to the flour the characteristics of the best quality Hungarian flour of pre-1914 days.

Apple Strudel

As soon as the dough-stretching is completed, sprinkle melted butter or fat over the whole surface. Into $\frac{1}{2}$ lb. dried Vienna bread crumbs in a saucepan, stir 2 oz. of hot butter or fat. Cover half



Viennese Apple Strudel

of the dough sheet, evenly, with the prepared crumbs. Peel cooking apples and slice them into thin chips, leaving the core untouched. Distribute the apple slices or chips over the crumb-covered part of the dough sheet. Sprinkle liberally with castor sugar, sultanas, and a few pinches of cinnamon. The addition of a few ounces of ground almonds and a few spoonfuls of apricot jam enhances the quality greatly.

Cover the fruited half with the bare half of the dough and begin to roll into shape by lifting the cloth with both hands and, if possible, employing an assistant to do the same. Roll up to Swiss roll fashion, and put on to greased baking sheet, three strudel or rolls. Brush the surface with melted butter or fat and bake in a sound oven for 30 to 40 min., according to size. When drawn, brush the strudel, once more, with melted fat. Before serving,

dust with icing sugar and cut into slices diagonally, another way, which is excellent, is to cover the whole dough sheet with crumbs and fruit and roll up.

Apricot Strudel

Sprinkle half of the thin dough sheet with toasted crumbs; cover with apricots, cut into slices (half an apricot cut into four slices). Dredge fresh fruit with sugar.

As an alternative the apricots may be brushed with warmed apricot jam. Sprinkle with flaked almonds, roll up into a strudel, proceed as for apple strudel.

Cherry Strudel

Sprinkle the thin dough sheet with warmed fat toasted crumbs. Cover with dark cherries (stones removed), dredge with sugar, roll up, and proceed as above.

Milli Rahm Strudel

Spread a $\frac{1}{2}$ in. layer of the following filling over the whole or half of the thin dough sheet :—

$\frac{1}{2}$ lb. butter	5 oz. flour
$\frac{1}{2}$ lb. sugar	$\frac{1}{2}$ lb. dry Vienna breadcrumbs
$2\frac{1}{2}$ pt. thick sour cream (Let the cream rest for two days in a shallow earthenware receptacle)	5 whites of eggs (beaten to stiff snow) $\frac{1}{4}$ lb. sultanas $\frac{1}{4}$ lb. currants

Cream the butter with the sugar, add gradually the cream and flour, follow up with the crumbs and finally, fold in the beaten whites.

Dredge all over with the currants and sultanas. Roll up as described. Do not cut the strudel roll into lengths, as usual, but roll it into the shape of a coil and place it into a suitably sized, greased earthenware pan. Brush the surface liberally with melted butter, bake, cut into portions, and serve with hot cream sauce. (Bechamel sauce, finished with fresh cream, as liaison, and sweetened with sugar).

Greek Strudel

One of my friends, the late M. Vlacos, a Greek, chef of the Roumanian Embassy, used to make a strudel with this filling :—

$4\frac{1}{2}$ oz. butter	3 eggs
$4\frac{1}{2}$ oz. sugar	$4\frac{1}{2}$ oz. flour

The butter and sugar are creamed up, the eggs added gradually and, finally, the flour.

Cut the thin dough sheet from pulled and stretched strudel dough into about 4 to 6 in. squares, put six squares, thinly covered with above filling, on top of each other, cover the tops with an unspread dough square, brush with melted butter, and bake.

Cream Curd Strudel (Topfen Strude)

Spread on the dough sheet prepared as indicated above, after sprinkling with melted butter and toasted crumbs, the following filling :—

1 lb. curd	4 yolks of eggs
2½ oz. butter	4 whites of eggs
2½ oz. castor sugar	4 oz. sultanas
Zest of 1 lemon	

Rub the curd through a tammy sieve. Mix into the creamed butter, the sugar and yolks, add the lemon zest, and fold into the mix the stiffly beaten whites and the sultanas. Shape with the table cloth into a strudel roll and manipulate as for Milli Rahm Strudel.

Plunder Dough Strudel

This is a rich fermented dough with folded-in butter, nut butter or margarine.

1½ pt. milk (or 1 qt. water and 4 oz. dried milk)	10 oz. sugar
5 lb flour	10 oz. butter
6 oz. yeast	½ pt. eggs
¾ oz. salt	Few drops of rum, sherry, and lemon essence
1 oz. cardamom (ground)	Cup full of egg powder (or saffron infusion)

Make a sponge from one-third of the milk (warm, 90 deg. F.) 2 oz. sugar, and ¾ lb. flour.

Dust the surface of the sponge with a finger-thick layer of flour. Get all the other ingredients ready and by then the sponge will be ready to be taken. Never let the sponge drop.

“To drop or not to drop,” that is the question with regard to the making of the many varieties of Viennese fermented specialities.

The sponge for plunder dough is ready when the surface of the sponge shows ⅛ in. wide cracks. It takes generally 15 to 20 min., depending upon the temperature of the flour, the milk, and the bakehouse or doughing room.

While the sponge ferments, all the other ingredients should be weighed and prepared : namely, dissolve the sugar, salt, egg, and dried milk, in the remaining cold water, add the essences and spices.

In warm weather—or for that matter, at any time of the year—use chopped ice (one-sixth of the total weight of the liquor) ; this makes an unquestionable improvement in this class of goods. Clear the sponge by vigorous slapping by hand, or stirring with a spatula. This procedure must be followed even when making three or four gallons of dough in a machine. Begin to mix the dough after all the flour is incorporated, and add the softened or melted butter or margarine : compound fat or hog lard need no preparing.

The temperature of the dough will range from 58 deg. F. to 70 deg. F., dependent upon the temperature of the ingredients.

The dough must be well braked in 8 or 10 lb. lumps, with the elbow, and left in bulk for $\frac{1}{2}$ hr. or so. Scale off into 8 lb. pieces, roll into rectangular shape, either with the rolling pin or dough brake, and distribute $1\frac{1}{2}$ lb. of butter, nut butter, pliable cake margarine, or frozen lard in $\frac{1}{2}$ oz. pieces over two-thirds of the dough sheet. Proceed as explained above under plunder paste and Danish pastes. Lay up for about 20 min. and give the paste a final half-turn.

Working off can begin after $\frac{1}{2}$ hr's. rest in a cool place, preferably in a refrigerator.

This plunder paste may be stored overnight or for one or two days in the refrigerator and used as required. Cold storage improves the mellowness of the baked products.

Fascinating apple, apricot, cherry, red currant jam, and milk curd strudel, are made from this plunder paste. The procedure of cutting out the paste and filling, etc. is the same as for puff paste strudel.

Tyrolean Strudel

Spread the thin dough sheet with the following filling :—

1 lb. butter	24 yolks of egg
1 lb. sugar	24 egg whites
	$3\frac{1}{2}$ pt. cream

For sprinkling over use :—

2 oz. ground cinnamon	9 lb. small chopped apples
$1\frac{3}{4}$ lb. ground or crushed walnuts	1 lb. sultanas
	$1\frac{1}{2}$ lb. dried Vienna breadcrumbs

Cream the butter, sugar and yolks, add the cinnamon and cream, fold in the stiffly beaten whites. Spread this batter evenly over the

dough. Now sprinkle on top, all over, the crumbs, ground walnuts, apples, and sultanas. Roll up to strudel shape and proceed as for apple strudel.

Walnut and Poppy Seed Strudel

All over Austria, Czechoslovakia, Poland, Hungary, Croatia, and Slavonia right down to Trieste on the Adriatic Sea, walnut and poppy seed strudel are known in every household. Pastry-cooks supply the demand which is very considerable, or was, before 1939.



Walnut and Poppy Seed Strudel

The basic dough for plunder paste will do very well for the making of these two kinds of strudel. The cutting, filling, manipulation, proofing and baking is similar to the above-mentioned kinds. The walnut and poppy seed fillings are spread over the pinned-out dough sheet $\frac{1}{4}$ in. thick, leaving on one of the long sides a $\frac{1}{2}$ in. border, which is brushed with egg glaze. Roll up the strudel, as for swiss roll, towards the border. Seal and put the strudel close down on greased baking sheets, and press them flat gently. Egg-wash twice and bake in a sound oven. When cold cut into slices.

Austrian Christmas Fruit Bread

(1 gall. dough)

10 lb. white rye flour	2 lb. orange peel
10 lb. wheat flour	4 lb. chopped hazel-nuts
10 lb. water (1 gall.)	4 oz. ground cinnamon
4 oz. yeast	$\frac{1}{2}$ oz. cloves (ground)
5 oz. salt	$\frac{1}{2}$ oz. ground nutmeg
10 lb. dried pears	$\frac{1}{2}$ oz. ground mace
10 lb. figs	1 gill rum

Boil the dried pears and orange peel until soft. Remove the cores and kernels. Cut the figs, orange peel, and chop the hazelnuts. With half of the warm pear water, the yeast and 5 lb. blended flours make a smooth batter sponge at 76 deg. F., and let it rise and drop. Add all the other ingredients and make into a fairly tight dough. Let lie for $\frac{1}{2}$ hr. and weigh off into 1 or 2 lb. pieces, mould into bloomer shapes, proof, and wash with cold water. Bake on the hearth at 400 deg. F.

This bread is in great favour all over Austria and the German-speaking parts of Switzerland where it is known as Bira Zelta. It keeps for weeks.

CHAPTER XIX.

VIENNA FANCY MILK TEA BREADS

(1 qt. *Author's brioche dough*)

1 qt. milk (cold)	14 oz. butter, cake margarine, and lard
6 oz. fast yeast	$\frac{1}{2}$ oz. salt
6 to 10 oz. castor sugar	Zest of 1 lemon
$\frac{1}{2}$ oz. liquid or	1 oz. rum
$\frac{1}{8}$ oz. dried malt extract	4 $\frac{1}{2}$ to 5 lb. "Millenium" type flour
8 eggs	

Straight dough at 70 to 72 deg. F. In summer use chopped ice in mixing the dough ; about 6 to 8 oz. including the milk. Knead and punch well. Let it lie in bakehouse temperature for 45 min. Give a good knock back or breaking with forearm, then allow to recover and scale off. For small crescents and fancy shapes, as illustrated, weigh heads for bun divider. Mould each lump well, let it recover, then put it through the divider. The pieces must be moulded round. To do this twice improves the final shape and the texture of the rolls when baked. The dough must be stiff and in no circumstances on the slack side.

The dough lumps for the bun divider should be :

Head with 50 divisions	3 $\frac{1}{2}$ lb.
Head with 36 divisions	2 $\frac{1}{2}$ lb.
Head with 30 divisions	2 lb. 1 oz.
Head with 25 divisions	1 $\frac{3}{4}$ lb.

When made into their final shapes, they are put in tins or on baking sheets and immediately glazed with broken-down whole eggs. Proofed in the normal bakehouse temperature, these brioches must be egg-glazed a second time before baking. The glazing must be done with a soft camel-hair brush. Scottish pastry bakers use the right kind of brush for their cookies and similar goods. These brioches may be put into a refrigerator 12 hr. before baking. The eating quality will be much enhanced and so will the mellowness.

I used this dough as the basis for a very large variety of fermented goods with success in hundreds of bakeries of the United Kingdom. An average dose of imagination mingled with common sense and

reason will enable the budding and the experienced craftsman to do likewise. He can save time and reap satisfaction threefold, namely, his own, his firm's, and the consumers.

This brioche dough is particularly good for stollen. By mixing dried fruits, peel, almonds, or marzipan into the dough is all that is required. If a richer dough is desired more butter and eggs can be added ; but in this case more flour and yeast has to be worked into the dough to give it the necessary stiffness and life.



Herd Kipfl

Stollen Dough from Vienna Brioche Dough

7 lb. Vienna brioche dough	$\frac{1}{2}$ lb. citron and orange peel
1 lb. sultanas	(strip or chopped)
1 lb. currants	$\frac{1}{2}$ lb. chopped almonds

Work the fruit well into the dough. It can be flavoured with $\frac{1}{4}$ oz. of ground cardamom and $\frac{1}{4}$ oz. of ground mace. Let the dough recover, scale off, mould round, let the pieces recover and give them the final shapes for Vienna, Dresden or Leipzig stollen as described in the chapter on stollen.

For Fruit Flans, as customary in almost all continental countries, streussel kuchen, fermented apple strudel, walnut and honey-seed cakes, the basic brioche dough or a much-liked variant may be used ; for instance use 2 lb. brioche dough and 2 lb. puff paste, which has had no more than three half-turns. Roll out the brioche dough into a rectangular piece $\frac{1}{2}$ in. thick and place the puff paste of smaller dimensions on top of it in such a manner that it can be enveloped by the fermented dough. The two long ends can be folded so that they meet in the centre of the puff paste. Give this combined dough paste two to three additional half turns with intervals as usual. This paste can be stored in the refrigerator or ice-box and used when required.

Fruit Flans

With every kind of fruit in season or preserved, flans made with this paste are liked by young and old in continental countries. There is every reason why they should be popular in this country, especially as the raw material cost of the paste is very much lower than short paste ; pastry with the fruit is more satisfying.

It is obvious that the plain brioche dough can be used for this class of goods, but if a flaky variety is made for a change, appetites will be tempted and sales receive a stimulus. Fruit flan shapes or rings placed in greased baking sheets are lined with the paste rolled out previously to $\frac{1}{8}$ in. Thumb the paste gently to a rim along the edges, stab a few times with the point of a knife, then brush the surface of the paste with warm butter, margarine or lard. Dredge thinly with dried cake crumbs or dried crumbs from Vienna Rolls, cover all over with fruit, making a pattern with apples or plums. Let it proof until ready for the oven, then glaze the bare parts of the flan with eggs. Dredge over the fruit castor or granulated sugar. A few pinches of ground cinnamon go very well with apples or plums.

Bake in a sound oven.

The above manipulations apply to fruit slices or squares baked in whole sheets. After baking they are cut into slices or square pieces. Two, three or four different kinds of fruits can be baked at the same time on the same sheet of paste.

Streussel topping may be used for streussel flans instead of fruit. The fruit flans or fruit-covered sheets can be finished off in "Guss fashion," namely, about 10 min. before they are drawn. Sufficient of the "Guss," or custard is poured over the fruit and the flans are put back into the oven to finish baking.

Queen Mary's Tea Loaf

(Made at Sir Philip Sassoon's, March 1934)

8 lb. flour	1 $\frac{1}{2}$ lb. butter
2 pt. full cream milk	2 $\frac{1}{2}$ oz. brandy
12 oz. yeast	2 $\frac{1}{2}$ oz. orange flower water
2 oz. malt extract	Zest of 2 lemons
2 oz. salt	3 lb. sultanas
32 yolks of eggs	1 lb. currants
1 $\frac{1}{2}$ lb. sugar	$\frac{1}{2}$ lb. citron peel
$\frac{1}{2}$ lb. almond strips	

Make a sponge with:—

2 pt. milk	2 lb. flour
12 oz. yeast	2 oz. malt extract

Apply Viennese sponging technique ; before dropping add the yolks, sugar, salt, rum and orange flower water to the sponge, clear it, and begin to mix. When all flour traces disappear work in the butter and make a not-too-slack dough. Let it rise once, fold in the fruit, let it rise again and weigh off into 1 lb. pieces. Hand up twice, allowing to recover each time, mould round, place on a buttered baking sheet. After 10 min. flatten gently to a disc-like shape, and proof in a warm place. Before baking wash with cold water and stab with knitting needle five times. Bake in oven at 410 deg. F. This special loaf I made at the wish of H.M. Queen Mary when she took tea at the late Sir Philip Sassoon's residence, 45 Park Lane, in 1934. The Queen desired Panetoni and the recipe is identical to the one I used at the above occasion.

Potato Milk Bread

(1½ hr. dough)

13 lb. flour (variable)	1½ lb. lard
1 qt. water	1½ lb. sugar
1 qt. milk	4 yolks of eggs
8 oz. yeast	2½ lb. boiled and mashed
2 oz. salt	potatoes
½ oz. mineral improver	Zest of 2 lemons
5 lb. sultanas	

Sponge :

1 qt. water 95 deg. F.	1½ lb. mashed potatoes
8 oz. yeast	2 oz. sugar
4 yolks of eggs	2 lb. flour

Make a smooth batter sponge by the usual Vienna sponging technique. Before dropping, dough up with 1 qt. milk (80 deg. F.) and the salt, mineral improver, sugar and balance of mashed potatoes. Clear and begin to mix with remainder of the flour, adding the softened lard when partly mixed. Make into a smooth, not-too-slack dough. Give three knocks back and scale off within 1½ hr. from making the dough. Proof for about 40 min. Bake in ordinary 1 lb. loaf tins. A beautiful loaf is obtained by breaking every piece into two and twisting the two strands like a rope. Add fruit when folding for the first time.

Bohemian Feast Bread and Plaits

4½ lb. "Millenium" type	4 yolks
flour (variable)	½ lb. butter
1 qt. full cream milk	14 oz. castor sugar
4½ oz. yeast	4 oz. ground almonds

$\frac{3}{4}$ oz. salt
2 whole eggs

Zest of 2 lemons
8 oz. sultanas

Make a sponge with $\frac{1}{2}$ pt. warm milk, yeast, 1 oz. sugar and 12 oz. flour. Let it get ripe. Meanwhile, cream the butter, sugar, eggs, yolks, salt, lemon zest, and ground almonds. Add the ripe sponge and mix into a firm dough with the balance of the flour: finally add the sultanas. Give a good folding and braking before laying up to proof. Let it come up well, give one knock back and brake after 20 min. Weigh off into heads for the bun divider. Divide, mould round, make strands and shape into plaits; egg-wash twice and bake on greased baking sheets or in glazed earthenware or tin shapes

French Cramique

Make a slacker dough or keep a part of it slacker for this purpose when mixing the dough. Add 15 to 20 per cent. of currants and sultanas. Weigh 1 lb. or 18 oz. dough pieces, mould them round, or into bloomer shapes after handing up and proof on baking sheets in round hoops about 6 in. in diameter or in narrow long cake tins, and bake at 410 deg. F. First-class French Cramique loaves will be the result.

Altering the fruit to currants and cut citron peel and baking in "bar" cake tins will produce the well-known Dutch Kruinten Brod.

Rich Greek Easter Bread

(Recipe from M. Vlacos, late chef of the Roumanian Embassy in London)

4 lb. flour	12 eggs
2 oz. yeast	$\frac{1}{2}$ oz. salt
Milk	$1\frac{1}{2}$ to 3 lb. butter
	$\frac{1}{2}$ lb. sugar

Method :

Make a sponge with 1 lb. flour, the yeast, and $\frac{1}{2}$ pt. milk. Let it stand overnight and in the morning, work into the sponge, the broken-up eggs, the salt and the remainder of the flour, finally the sugar. Give it a good mixing. Shape into round loaves. Fully proofed, egg-washed, then bake in a moderate oven.

Malt Rolls

(2 hr. straight dough)

48 lb. wheatmeal	13 oz. yeast
24 lb. flour ("Millenium" type)	3 lb. fat
4 $\frac{1}{2}$ gall. water	12 oz. full cream dried milk
	15 oz. malt extract

Make into a smooth not-too-slack dough. Dough temperature 80 deg. F. Let lie for 1½ hr. Give one knock back and scale off in ½ hr. at 9½ oz. each. Shape into small bloomers and proof on baking sheets. Bake at 410 deg. F. Give the rolls two or three cuts as for batons.

Pumpernickel Bread

This black bread has an extremely "tacky" consistency but met with a good sale in pre-war days here in Great Britain.

10 lb. coarse rye meal or crushed rye	½ lb. molasses or similar syrup
10 lb. rye flour	½ lb. yeast
28 lb. wheat flour (as strong as obtainable)	1 lb. potato flour
5 lb. leaven	1 lb. salt
	30 lb. water

Make a smooth batter sponge with 5 qt. of water, the leaven, molasses, potato flour, and 15 lb. blended flours. Sponge temperature 75 deg. F. Let lie for 5 hr. well covered. Clear the sponge with the balance of water, add the salt and flours and make into a firm dough. Work off after ½ to ¾ hr. and bake in Scottish batch loaf fashion in a cool oven (320-340 deg. F.) for 3 to 5 hr.

Another good starter for Leaven

2½ lb. rye flour	¾ oz. lactic acid
1 qt. water 78 deg. F.	¾ oz. yeast

Mix the above into a dough and let ferment for 8 to 10 hr. Add 1 qt. of water at 78 deg. F., 2½ lb. rye flour and mix well to a homogeneous mass. Let ferment once more for 6 hr.

This leaven can be used as basis for making rye breads.

Dutch Mik Bread

18 lb. flour blend (50 per cent. rye and 50 per cent. wheat flour)	1 gall. water 1¼ lb. yeast ½ lb. salt
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Make a straight dough at 80 deg. F. Let ferment for 1 hr., then knock back. When recovered, scale, and proceed in the usual manner. Mould the loaves into bloomer shapes ; before setting, wash and cut across four times. Bake at 450 deg. F., when half baked shift about or transfer to a cooler baking chamber.

Jewish Beugl

20 lb. old white bread dough	2 oz. sugar
1 gall. water	4 oz. salt
1½ oz. yeast	18 to 20 lb. flour (variable)

Mix into a tight dough at 72 deg. F. or thereabouts. Let rest for $1\frac{1}{4}$ to $1\frac{1}{2}$ hr. Knock back, let recover and scale off into heads for the bun divider. Shape into long rope-like strands. Form a ring with each piece, rolling and squeezing them with the fore and middle finger of the right hand nipping the two ends well together to be properly sealed. Lay up to proof. Submerge in boiling water and when the pieces surface, prod out with the fingers—the boiled beugl should not collapse. Put on to wet slip peels and put the peel into the oven for about 3 min., letting the beugls dry on the peel. Withdraw the slip peel, sever the beugls from the peel with a piece of string, and put them on another peel for setting immediately. Cut off beugls may be put on boards until they are required for baking. Before baking, the beugls may be sprinkled with poppy seeds.

Swedish Knäkke Brod

This kind of bread is gaining great popularity in Great Britain. I made these, gramophone-record-like, 9 in. diameter, thin crisp, delicious rye bread in Vienna every day. My firm exported 1 cwt. of it every month to Riga of all places.

Ground carraway or coriander seeds are used to flavour the dough. Fifty per cent. of finely ground rye flour and fifty per cent. of squashed or crushed whole rye is used for making this crisp, almost everlasting speciality.

For large scale production, special equipment, namely dough mixing machines with accurate agitation of cold air under pressure have been in existence for more than 35 years.

Slacker doughs can be handled and extraordinary mellowness and keeping properties are the outstanding features of this bread.

Ingredients for 1 gall. dough :

5 lb. wheat flour	6 oz. yeast
5 lb. fine rye meal	$4\frac{1}{2}$ oz. salt
6 lb. crushed or squashed	3 oz. malt extract
rye	14 oz. fat, or 3 lb. puff paste
1 gall. water	cuttings

Method : Make a smooth sponge at 74 deg. F. with :

2 qt. water	6 oz. yeast
5 lb. wheat flour	3 oz. malt extract

Let ferment until sponge shows signs of dropping. Add the balance of the cold water, salt, fat, or puff paste cuttings, and rye meal and flour. Mix into a smooth dough. Let it come up once and knock the dough back by good braking with forearm or with the pastry or biscuit brake. Scale off into 4 oz. pieces, mould round,

let recover, and pin out into round pieces $\frac{1}{16}$ in. thick. These pinning out manipulations must be performed on a cast iron sheet about $\frac{1}{2}$ in. thick bearing a diamond pattern. Dust the metal sheet with flour. Put the pinned-out dough piece on the metal sheet and roll the rolling pin over it lightly. Remove and place upside down on the table showing the diamond pattern. Cut out with a round plain cutter 8 in. in diameter and put on to greased baking sheets. With a 1 in. cutter make a hole in the centre of each piece, or use a plain round cutter with three sections as customary in Scotland for cutting out oat cakes. Let proof for a $\frac{1}{4}$ hr., stabbing the pieces beforehand. Bake in oven at 410-420 deg. F.

There are less breakages with the triangular cut crisp breads. Packing in transparent cellulose paper or other material is most advantageous and gives an individual note for marketing and selling.

Rye-Soya Bread

After the first world war the British Relief Missions were instrumental in the baking and distribution of a most nutritious bread among the starved nursing mothers of Vienna. I baked this bread in Vienna and London. It was known as "Manna" bread because a 1 lb. loaf possessed the nutritive value of 1 lb. beef without bones. The Austrian Ministries of food, health, and social welfare supported the British Voluntary Welfare organisations with all their might.

(2 gall. dough)

10 lb. flour (spring wheat flour)	1 gall. water
10 oz. yeast	4 oz. malt extract

Make a smooth batter sponge. Let it ripen, and, when on the drop, mix the dough. Sponge temperature 75 deg. F.

Dough :

4 lb. wheat flour	2 lb. wheatmeal flour
8 lb. fine rye flour	1 gall. water
8 lb. raw (unprocessed,) soya flour	10 oz. salt

Mix into not too firm dough, temperature 74 deg. F. Let it come up once, then knock back. Let recover and scale off in 18 oz. or 32 oz. pieces. Hand up, let recover, and mould for tin loaves or oven bottom bloomer shapes. Proof. Bake in the usual manner for $3\frac{1}{2}$ hr. at 360 deg. F.

Flavour and texture are beyond praise, and so is the beautiful bloom of the crust.

CHAPTER XX.

RUSKS.

Marienbad Rusks

(1gall. 1 qt. dough)

1 qt. full cream milk	1 pt. yolks of eggs
5 to 5½ lb. "Millenium" type flour	¾ oz. salt
3½ oz. yeast	½ gill of rum
1 oz. malt extract	Zest of 1½ lemons
12 oz. raw cane sugar	⅛ oz. ground cloves
14 oz. butter	⅛ oz. ground mace
	⅛ oz. ground nutmeg

Make a smooth batter sponge with 1 pt. lukewarm milk, yeast, malt extract, and 1¼ lb. flour. When on the drop, pour in the rest of the milk in which the egg yolks, sugar, salt, lemon zest, rum, and spices have been whisked. Clear and start mixing. Add the softened batter when the dough mass clears, mix into a firm dough, brake well, and let proof in a warm place, well covered, until cracks begin to show.

Knock back, let recover, and weigh into heads at 2½ lb. for a 30 piece divider. Mould the pieces twice, dust and shuffle them about as described in the chapter "Work at the Table," let recover, and mould (baton technique) into 3 to 3½ in. shuttle shapes. Put them in rows across the baking sheet, as for luxury rusks and proceed in the same way with proofing, baking, and storing.

When ready for finishing off, cut from each row, the bottom and top crust and then from both sides as well, as for a strip of genoese. Treat each piece the same. Then cut ⅛ in. slices. Each slice, one under each hand held straight with closed finger, has to be rubbed gently into vanilla flavoured icing sugar, by making a circular movement with both hands toward each other. Both sides of each piece receive this treatment. Put the sugared rusk slices on to clean wires as used for fondant dipping. Roast carefully in an oven not above 410 deg. F. and do not roast more than four wires full at a time. The rusks will show the pattern of the wire they were roasted on, the white icing sugar will still be white and the rusks, when broken, will have a fawny tint.

I made these rusks with my eleven colleagues from Vienna,



*Children or Infants
Spiced*

Grazer or Graz

Plain

in the model Vienna bakery of the Austrian Exhibition, at Earls Court in 1906. And at Brown Bros. Cafe Ltd., Weston-super-Mare, for whom I won my first prize at the Food and Cookery Exhibition in 1908.

Marienbad, by the way, at the time I write these lines is a closed city—because of its uranium, or bitschblende ore findings. Before 1914, Marienbad was a world-famous gathering place of society. King Edward VII visited this famous spa of Bohemia regularly. As Prince of Wales and as King he took the waters. Leading statesmen, men of science, of the professions and the fine arts and men of leisure also met there. At that time Marienbad was the rendezvous of Sir Campbell - Bannerman, Lloyd George, Clemenceau, crowned heads, princes and millionaires. A brilliant galaxy of beautiful and high spirited ladies completed an ideal setting in so charming a spot, blessed by Dame Nature. Edward VII set the fashion even to the lowest waistcoat button, which remains still undone with man to this very day. And Marienbad is a closed, silent city !

Vienna Luxury Rusks

(1 gall. dough)

21 to 22 lb. flour (variable)	9 whole eggs
2 qt. full cream milk (cold)	3 $\frac{3}{4}$ lb. raw cane sugar
2 qt. water 95 deg. F.	2 $\frac{3}{4}$ lb. butter
8 oz. yeast	4 oz. salt
8 oz. processed soya flour	22 drops of lemon oil
12 drops of oil of nutmeg	

Make a smooth batter sponge with water, yeast, soya flour and 4 oz. sugar plus 4 lb. flour. After 25 min. pour on the cold milk into which the eggs, salt, sugar, and spice have been whisked. Begin to mix when sponge mass is cleared and add softened butter when all the flour has disappeared and a dough begins to form. Make into a medium dough. Brake well and ferment for 50 min. Knock back and let rest for another $\frac{1}{2}$ hr. Knock back a second time, and weigh off in 20 min. into 8 oz. pieces. Hand up and mould (baton technique) into 10 to 12 in. long bloomer-like loaves, or weigh for bun divider 2 $\frac{1}{2}$ lb. for 30 pieces. Mould round, let recover and mould (baton technique) into finger shapes. Put 14 to 15 in four rows across, on greased baking sheets. Proof in dry warmth. With the loaf shaped proceed in similar manner, but before baking, stab each loaf with a knitting needle three times. Bake in an oven with open damper, at 400 to 410 deg. F. Do not overbake.

After baking lift each row off the baking sheet and put them upside down on boards, the same treatment is given to the single

baked loaves. Store them in a cool and airy place for 24 hr. When ready, finish off.

Cut thin slices about $\frac{1}{5}$ in. and put them in neat rows side by side on biscuit wires or scrupulously clean baking sheets. Roast them, about four sheets or wires at a time, in an oven at 410 deg. F. When the surface shows a golden brown tint, take out of the oven, turn each rusk carefully and finish roasting.

Speciality Rusks

(1 gall. dough)

17 lb. "Millenium" type flour (variable)	3 $\frac{1}{4}$ lb. raw cane sugar
1 gall. fresh full cream milk	2 lb. butter
$\frac{1}{2}$ lb. yeast	$\frac{3}{4}$ pt. egg yolks
4 oz. malt extract	Zest of 4 lemons
2 oz. salt	1 oz. cardamom and nutmeg or ground cloves
2 oz. rum	

Make a sponge in the Viennese fashion, with 3 qt. milk at 95 deg. F., yeast, malt extract, and 6 lb. flour. Let it ripen. Meanwhile, whisk the yolks with the remaining quart of cold milk, sugar, salt, rum, lemon zest, and spices. When the sponge is on the drop, pour the solution into the sponge, clear, and start mixing. When every trace of flour disappears, add the softened butter and make into a medium dough. Brake thoroughly and let rest until cracks appear on surface. Knock back and scale off in 30 min. Weigh for 30 pieces bun divider at 2 $\frac{3}{4}$ lb. Mould, shape, proof, and bake as for Luxury Rusks.

Before baking, glaze the rows with eggs. The rusks must be baked just enough to stand handling, otherwise the crust of the toasted rusks will be burned and will peel off.

Toasting for children's or infant's rusks will have to be done in an oven temperature of 480 deg. F. and on clean, dry, polished baking sheets set closely together. Not more than four sheets should be manipulated at a time. When the surface shows a golden brown tint, draw and turn the rusks, put them back and finish toasting.

A different method is worked in biscuit factories where special ovens are available.

Graz Rusks

Graz is the capital of Syria, a province of Austria.

Cut slices $\frac{1}{5}$ in. thick, rub them gently in icing sugar flavoured with ground cinnamon and leave the slices for some time in a heap until they show signs of sweating. Reshuffle, sieve some more

icing sugar over them, knock the slices gently against the table, then roast them carefully on biscuit wires. The break should show also the fawny tint, characteristic to this class of goods.

Fancy Rusks

Cut the rusk rows into $\frac{1}{5}$ to $\frac{1}{4}$ in. slices, roast on one side only on baking sheets. Draw, turn them, and cover the unroasted surface with white, pink, coffee, or chocolate coloured royal icing. Dry carefully in the oven at 410 deg. F.

Tea Rusks

(1 gall. dough)

Sponge :

2 qt. scalded full cream milk	1 pt. eggs
95 deg. F.	1 $\frac{1}{2}$ lb. honey (warmed)
1 lb. yeast	3 $\frac{1}{2}$ lb. "Millenium" type flour

Let it get ripe and, when dropping, add :

2 qt. scalded milk 90 deg. F.

Then dough with :

20 lb. flour	1 $\frac{1}{2}$ lb. sugar
8 oz. baking powder (2:1, well sieved, 3 times)	4 lb. glucose (warmed)
	2 lb. hog lard, or nut butter

Dough temperature 80 deg. F.

Mix in the Viennese fashion, adding the melted fat last. Let it lie for about 1 hr., and proceed in the same manner as for plain or infant rusks.

Friedrichsdorf Rusks

(1 gall. dough)

12 $\frac{1}{2}$ lb. "Millenium" type flour	3 oz. salt
1 lb. 6 oz. wheat corn flour	2 $\frac{1}{4}$ lb. raw cane sugar
4 gall. 1 pt. milk	2 $\frac{1}{4}$ lb. butter
	6 eggs
	7 oz. yeast

Sponge :

6 pt. milk 95 deg. F.	7 oz. yeast
.6 eggs	8 lb. flour
	$\frac{1}{4}$ lb. sugar

Let the sponge get ripe and drop. Meanwhile, dissolve the sugar and salt in the balance of the milk (lukewarm), mix into a dough and, when cleared of all the flour, add the softened butter.

Mix into a slack dough and proceed as for plain rusks.

Almond Rusks

Prepare the rusks as above but, after roasting on one side only, cover the other side with white royal icing, dip them into slightly roasted flaked almonds and dry carefully in the oven.

Pack an assortment, say six rusks, of the plain colours and almond-dipped ones, in suitable wrappers. Children like them better than the factory biscuits. Ladies take to it very quickly, especially those who are prone to the slimming vogue. Why do family bakers neglect this interesting and very profitable branch of our trade ?—It is neglected by the big factories curiously enough.

Officers' Rusks (Uhl-Breunig, Vienna 1914)

28 lb. "Millenium" type	2¼ oz. cream-of-tartar
flour (variable)	10 oz. syrup (warmed)
2¼ lb. milk	4¼ lb. raw cane sugar
2¼ lb. eggs (liquid)	2½ lb. hog lard
2 oz. yeast	7 drops aniseed oil
6 oz. salt	

Adopt biscuit production technique.

Yield : 186 biscuits weighing 17.2 kilos (about 37¾ lb.) These biscuits were supplied to the Austrian Army.

Wine Rusks

Use good quality rusks. Cut ¼ in. slices and rub both sides into sandal wood spice the same way as for Marienbad rusks. When served at table the rusks are dabbed with a brush dipped in bordeaux, claret or good port wine.

Spice for Wine Rusks

1 lb. icing sugar	1¾ oz. mixed spice (containing ground cloves)
1¾ oz. finely ground sandal wood	

Sieve together and keep in airtight tin.

Emms Rusks

Sponge at 78 deg. F. :

2 pt. water 95 deg. F.	6 oz. yeast
2½ lb. flour	2 eggs
3 oz. malt extract	

Mix into a smooth batter sponge and let it get ripe but do not allow it to drop.

Dough up with :

2 pt. milk	¾ lb. butter
1½ lb. raw cane sugar	No salt
6½ lb. flour	

Make a dough in the usual way. Give one knock back, let recover, and proceed as for ordinary rusks. Mould into finger shape and give full proof. Split into two after 24 hr. rest and place on a scrupulously clean, dry baking sheet and bake at 460 deg. F.

These saltless rusks are for people who suffer with kidney diseases (nephritis).

Carlsbad Tea Straws

This famous speciality made in Uhl-Breunig's bakeries in Carlsbad and Vienna is known in all the countries which once formed the Austrian-Hungarian Monarchy. Nowadays, one finds imitations in Great Britain and the U.S.A., but they are not comparable with the genuine article.

Ingredients :

4½ lb. "Millenium" type flour	1 oz. salt
1 lb. cold full cream milk	1 oz. cane sugar
4 oz. yeast	Zest of 1 lemon
2 lb. butter	

Mix the above ingredients into a smooth paste and let rest for 1 hr. Knock back and work off. Weigh into 1¼ lb. lumps for 36 pieces. Mould round and roll into thin rope-like strands. Put across, parallel to each other, on greased baking sheets, egg-wash, and proof. When ready, make incisions with a scraper or a knife right down the length of the baking sheet, dividing each stick into three. Before baking at 420 deg. F. wash again with eggs and dredge some with nib sugar, some with coarse salt, some with poppy seeds, and leave some plain. When baked and cold, pack in cellulose paper, or tie with coloured ribbons into bundles for the counter or window.

CHAPTER XXI

VIENNA CARNIVAL PANCAKES GROUP

Sylvester Night—Frolic Night ! New Year's Eve, or Sylvester Night as the Viennese call it, in Scotland and America merry-making begins ; but in Vienna it never ends until Ash Wednesday. Prince Carnival reigns supreme whilst the Viennese are his willing slaves, snatching spells of sleep at the oddest of times.

Punch and Pancakes, the two outstanding exquisite gastronomic features accompany haunting music, make the never-tiring, pleasure-loving Viennese, young and old alike, dance into the early and late hours of the morning.

Vienna Carnival Pancakes are as light as a feather—this is literally true. An old Viennese saying signifying something being very light and dainty is “As light as a Carnival Pancake !”

Very poor imitations are known and popular in Great Britain and America under the very appropriate name “Doughnuts.” Nuts indeed ! A number of original recipes will show at a glance the difference of the famous and delicious creation of the craftsman from its poor relation the “Doughnut.” In the Viennese Carnival Pancake we have another distinguished old aristocrat on the table of the discriminating and fastidious gourmet.

Use 25 to 33 per cent. of the total liquid (milk) for a short-time sponge in which the yeast has been dispersed and 1 oz. sugar per quart dissolved ; the same weight of flour as milk and proceed as described previously. Meanwhile, whisk the eggs or yolks with the sugar, salt, rum, and lemon zest over a pan with hot water, or bain marie, and pour into the balance of the lukewarm milk. The milk for sponging should be 85 deg. F., and the sponge be taken before it drops. Clear the sponge and make with the rest of flour and the softened fat, a smooth, slack dough which must be well beaten up or slapped. Keep the dough in a warm place and protect from draughts. Knock back twice within 1 hr. by folding or punching. Half-an-hour after the second knock back weigh off into 4 or 6 lb. pieces, pin out to about $\frac{1}{8}$ in. Use two round, plain cutters of different diameter, and with the larger one just mark half of the surface of the pinned out and well brushed dough sheet, and from the other half cut the same number as those marked. Pipe a spot of apricot jam on the marked pieces, and put the cut-out rounds on the jammed, upside down. Seal the two halves lying on top of each other,

carefully but speedily, by pressing them gently together with the index and middle finger of both hands on the outside, in circular fashion. Cut out each pancake with the smaller cutter firmly, thus separating them and put them on a warmed cloth-covered board, slightly dusted with flour, upside down. Cover the pancakes with a cloth and give full proof (dry) in a protected place.

When fried they must be very light—"as light as a feather"—and when pounded or punched with the fist—rebound immediately to their original shape. When cold, vanilla icing sugar is dredged or sieved over the top, often with a star design, of these fascinating world-famous confections.

Bakers and confectioners who cater for a poorer clientèle make their pancake dough from a leaner recipe and work them off as follows : Pin out the dough to $\frac{1}{4}$ in. thick or more and cut out with a plain cutter $2\frac{1}{2}$ in. diameter. Put on cloth-covered boards to proof upside down. Cover up. When ready for frying, put each pancake upside down into the hot lard and proceed as described. These pancakes show also that beautiful light yellowish ring round the middle.

By the way, Vienna carnival pancakes are not round like those bullets called doughnuts.

The best fat for frying this speciality, without question, is pure hog lard. Do not overheat : test with a drop of water. Insert the wire in the well-known manner but put each pancake upside down into the lard. Cover with a lid and fry until the bottom half of each shows a beautiful brown tint. Turn the pancakes with a wire loop and finish frying with the lid off. When ready, lift the lot out of the pan with the supporting wire and put them on to wires to drain. Each pancake must show a distinct pale yellow, ring-like mark around the middle ; it is one of the characteristic signs of the perfect Viennese carnival pancake, their axis is about twice the height.

Good Vienna Carnival Pancakes

4½ lb. flour
1 qt. milk
5 oz. yeast
8 shell eggs

8 yolks of eggs
9 oz. sugar
14 oz. butter
2 tablespoonsful rum

Make a sponge with $\frac{1}{2}$ pt. milk, yeast, 1 oz. sugar, and 8 oz. flour. Let it get ripe. Meanwhile, whisk the eggs, yolks, sugar over bain marie, add the softened butter and the rum. Pour into the sponge with the balance of the lukewarm milk and mix into a medium dough. Let it rise once, pin out, and proceed in described manner.

Best Quality Viennese Carnival Pancakes

5½ lb. "Millenium" type	8 oz. sugar
flour (variable)	1 lb. 2 oz. butter
3½ pt. (about) single cream	8 whites of eggs (beaten stiff)
6 oz. yeast	
1 oz. salt	2 oz. rum
40 yolks of eggs	Zest of 4 lemons

Sponge with 1 pt milk, add the whites of eggs before drawing in the rest of the flour for mixing the dough. Beat the dough by slapping it with both hands on the table until blisters are showing on the dough's surface. Proceed as described.

Vienna Carnival Pancakes

(Uhl-Breunig of Vienna I. Imperial Court)

(1 gall. dough)

13½ lb. "Millenium" type	1 lb. sugar
flour (variable)	1 lb. 6 oz. butter
1 gall. full cream milk	51 yolks of eggs (1½ pt.)
8 oz. yeast	3 oz. rum
2¼ oz. salt	Zest of 3 lemons

Sponge with 1 qt. milk, yeast, 2 oz. sugar, and 2 lb. flour. Proceed as described.

Berlin Carnival Pancakes

9½ lb. "Millenium" type	1 lb. 2 oz. butter
flour (variable)	4 oz. bitter almonds (ground)
12 oz. yeast	Zest of 4 lemons
1 oz. salt	2 qt. (about) milk
¾ lb. sugar	24 yolks of eggs
	16 whole eggs

Make a batter sponge with 1 pt. milk (95 deg. F.), 1 oz. sugar, and 1 lb. flour. Proceed as above.

Viennese Carnival Pancakes

(French Method by M. Escoffier, Carlton Hotel, London.)

6 lb. "Millenium" type	1½ oz. salt
flour (variable)	2 oz. sugar
1 pt. fresh full cream milk	2 lb. butter
3 oz. yeast	30 shell eggs (2½ pt.)

Dissolve the yeast in the milk (90 deg. F.), 1 oz. sugar, and 1 lb. flour for a batter sponge. Let it get ripe but do not

allow it to drop. Meanwhile, mix a dough with eggs, sugar, salt, and the remainder of the flour. Work the softened butter into the dough in four to five portions.

This typically French method of mixing brioche doughs and suchlike seems to be somewhat laborious to the modern British pastrycook.

Finally, the ripe sponge is incorporated into this separate dough. Let this dough rise to its utmost, pin out to $\frac{1}{8}$ in. and proceed as described. Let proof for about $\frac{1}{2}$ hr. in the Viennese manner and fry in hog lard.

The late M. Escoffier, chef of the Carlton Hotel in London, had another typically French way of frying and finishing Viennese carnival pancakes. He put them on greased paper to fry and, when still hot, steeped the pancakes in hot, thin, arrack or liqueur-flavoured syrup, for a second or two. They were allowed to drain and, when cold, decorated with whipped vanilla cream.

Bavarian Pancakes (Kucherl)

Use any Vienna carnival pancake dough and pin it out to $\frac{1}{8}$ in. Cut with a plain, round cutter about 4 in. diameter. Proof on cloth-covered boards, covered up and well protected from draughts. When putting into the hot lard, make a marked impression, with the finger-tips, in the centre of each pancake. After frying, fill the marked grooves of the pancake with cherry jam.

Bohemian Pancakes (Dalken)

7 lb. flour	8 shell eggs
$3\frac{1}{2}$ pt. fresh full cream milk	6 oz. sugar
5 oz. yeast	6 oz. butter
1 oz. salt	Zest of 2 lemons

Make a sponge with 1 pt. milk (85 deg. F.), yeast, $\frac{1}{2}$ oz. sugar, and 1 lb. of flour. Let it get ripe, then blend in the lukewarm milk, sugar, eggs, salt and melted butter, and dough up. Give a good slapping. The dough should be very slack and warm, (85 deg. F.). Let it come up once fully and drop pieces of dough into the hot lard with a large spoon dipped into water. Fry, and when cold, put a spot of "Powidl" (a highly concentrated jam from plums or prunes flavoured with rum) on each pancake.

CHAPTER XXII

FILLINGS FOR FERMENTED PASTRIES.

Walnut

(1)

1 $\frac{1}{4}$ lb. ground or chopped walnuts (or half walnuts and roasted hazel-nuts).

6 oz. dry crumbs from Vienna rolls or good plain cakes

1 lb. castor sugar

Zest of 1 lemon

$\frac{1}{2}$ pt. milk

$\frac{1}{2}$ oz. ground cinnamon

Dash of rum

1 oz. hot lard

Boil the milk, stir into it the walnuts, sugar, crumbs, spice, rum, and lastly the lard. Make into a firm paste.

(2)

1 $\frac{3}{4}$ lb. fine ground or
chopped walnuts

10 oz. sugar

Zest of one lemon

1 lb. 6 oz. crumbs from
dried Vienna rolls or
cake crumbs

$\frac{1}{2}$ oz. ground cinnamon

Water

Make a stiff paste.

Poppy Seed

(1)

1 lb. 2 oz. poppy seeds
(scalded or boiled and/
or pounded, in about
 $\frac{1}{2}$ pt. milk)

4 eggs

5 oz. hot butter

$\frac{1}{2}$ oz. bitter almonds

$\frac{3}{8}$ oz. cloves (ground)

1 lb. fine castor sugar

$\frac{1}{8}$ oz. ground cinnamon

2 oz. honey

Mix all the ingredients together, adding the hot butter last. Keep in a stone or glass jar.

(2)

1 lb. 2 oz. poppy seeds

$\frac{1}{2}$ pt. milk

10 oz. castor sugar

$\frac{1}{4}$ oz. ground cinnamon

10 oz. cake crumbs

Zest of $\frac{1}{2}$ lemon

Boil the poppy seeds, contained in a bag, in milk. When soft, add the sugar, cinnamon, and lemon zest. Take off the fire and store in jars. Use as directed. The taste of the filling will be greatly improved by adding 2 to 4 oz. honey, and stirring it into the hot poppy seeds.

Streussel

- | | |
|-------------------------------|--------------------|
| 10 oz. ground almonds | 15 oz. icing sugar |
| 2 oz. bitter almonds (ground) | 15 oz. flour |
| 10 oz. butter | 6 whites of eggs |

Mix the butter, sugar, and egg whites, and rub the mixture gradually into the mixed flour and almonds. Before using, rub the paste through a wire sieve. Use for topping flans, etc. as directed.

Sweet Milk Curd

(1)

- | | |
|-------------------|--------------------|
| 11 oz. milk curd | 2 oz. flour |
| 4 oz. butter | 6 yolks of eggs |
| 8 oz. icing sugar | Zest of half lemon |

Strain the coagulated milk through a muslin or cotton cloth, let it drain overnight, and tie on water tap over the sink.

Treat the curd as follows : Rub it through a fine meshed sieve. Cream the butter, sugar, flour, and egg yolks, add the curd and zest of lemon, finely chopped or grated. Store in a stone or enamel basin.

(2)

- | | |
|--------------------|-----------------|
| 1 lb. milk curd | 9 eggs |
| 5 oz. butter | Little salt |
| 10 oz. icing sugar | Zest of 1 lemon |
| 2 oz. flour | 2½ oz. sultanas |

Vanilla Custard

- | | |
|---|------------------|
| 1 qt. full cream milk | 12 yolks of eggs |
| 10 oz. powdered or fine
castor sugar | 3 oz. cornflour |
| | ½ oz. butter |

1 bourbon vanilla pod

Split the vanilla pod into halves, place with milk into a saucepan, and bring to the boil. Meanwhile, stir into the cornflour some cold milk to make a thin paste, add the yolks and the sugar, and beat well together. Pour the boiling milk slowly on to the whisked cornflour and eggs, whisking or stirring all the time. Pour back

into the saucepan (not an aluminium one) with the vanilla pod, bring to the boil again, take off the fire and allow to thicken, stirring continuously with a spatula. While still hot, stir into the custard the small piece of butter. Remove the vanilla pod when the custard is cold. Clean and dry the vanilla and use for making vanilla sugar.

Vienna Almond Cream

2 lb. castor sugar	1 lb. butter
1½ lb. ground almond (or half almond and half sponge- cake crumbs)	Little water 10 eggs

Rose water, orange flower water, or rum, brandy, kirschwasser, chartreuse, maraschino or bergamotte, etc.

Cream the butter with the sugar and gradually add the eggs. Separately mix the ground almonds (and sponge-cake crumbs) with sufficient cold water to obtain a paste of marzipan consistency. Add this paste to the butter-cream and flavour as desired. This filling will keep a week or so if put into a stone jar or basin and kept in a cool place.

Needless to say, this almond cream filling is something of the best and is excellent as a filling for first-class, puff-paste goods. Do not cream up too much ; the grains of the castor sugar should be felt.

“Guss” for Fruit Flans (Weiher)

(1)

5½ oz. flour	5 eggs
1½ pt. full cream milk	10 yolks
11 oz. fine castor sugar	2 oz. ground almonds
14 oz. melted butter	1 oz. vanilla sugar

Boil the milk and stir into it 5½ oz. flour, whisked into the eggs with the sugar. Add the melted butter, ground almonds and the vanilla sugar, stirring the mixture well over a gas ring.

This so-called “Guss” (Guss from the German “to pour on”) is of pancake batter consistency, and is used for pouring on nearly all kinds of baked fruit flans. This formula is one of the richest of its kind and is used only for the best quality goods in hotels and private establishments of royalty, and the well-to-do.

The fresh fruit should be slightly warmed together with a little butter before being put on the paste which should be liberally brushed with melted butter.

(2)

1 pt. vanilla custard 1 gill milk (about)
6 whites of eggs

Thin down the custard with a little milk and fold in the snow of the six whites. Pour over the flans or sheets filled with fruits.

Spice for Stollen

(1)

$3\frac{1}{4}$ lb. powdered castor sugar $\frac{3}{4}$ lb. ground mace
 $\frac{3}{4}$ lb. vanilla icing sugar 4 oz. ground cardamom
4 oz. zest of lemon

(2)

10 lb. powdered sugar 1 lb. ground nutmeg
3 lb. vanilla icing sugar 8 oz. ground cardamom
4 oz. zest of lemon

Use 1 oz. spice to every 3 lb. flour.

Vanilla Sugar

(1)

Pound 5 lb. sugar with 5 oz. bourbon vanilla pods and keep in glass jar or tin box.

(2)

Dissolve $\frac{3}{4}$ oz. vanilla crystals in alcohol and mix with $\frac{3}{4}$ lb. icing sugar. Dry well, sieve, and keep in closed tin box for use.

Vanilla as essence : Dissolve $1\frac{1}{8}$ oz. or 30 grams of vanilla crystals in 250 cc's (alcohol 96 deg.). Blend this solvent with 750 cc's of water and keep in bottle for use.

CHAPTER XXIII

VIENNA RYE BREADS AND ROLLS

The continuous and steady influx of people from the continent has brought in its train a great and ever-growing demand of other types of bread and fermented bakery products. At every demonstration I mention this fact, and show some lines which are very much looked for by Jewish customers, who are only too willing to pay a good price for something good. A great percentage of the pre-war refugees are Jews or of Jewish origin, and bread holds a very honoured place on their table, because of its symbolic significance and ritual memory, which explains why Jews are so fastidious with regard to bread and fermented pastries.

Rye bread has not received much attention by the British public, mainly because of the erroneous assumption that rye bread is black, and sour ! This may be true to some extent. The rye bread one generally finds here is of the Polish and Russian type which has no appeal to the British, who are white bread eaters.

It is quite a different story with rye bread and rolls made and baked in the Viennese fashion, a fashion adhered to in U.S.A. bakeries. The wide range of rye breads of this kind are very appetising and command a good sale among people of Anglo-Saxon origin.

Rye bread need not be sour. It can be fermented entirely with yeast. It need not be black, or even as brown as some of the brown breads we know so well. Viennese rye bread is usually made from 30 to 60 per cent. of rye flour and the rest wheat flour. British millers produce a beautiful white rye flour, better in colour than some of the national flours of 1950. The taste of the bread made with it is very pleasant, the texture is close and the crust a golden bloom.

I introduced Viennese rye bread to firms of the highest repute, using a simplified half sponge (2 hr.) process and making it easy to control the desired acidity—or absence of it—for the baker. I blend the desired percentage of best English white rye flour with the national flour by sieving and use it in sponge and dough.

Rye Bread Dough

(1 gall.)

Sponge :

8 lb. blended flours (30 per cent white rye + 70 per cent nat. flour)	5 oz. yeast 1 oz. malt extract 2 oz. dried milk
2 qt. water 90 deg. F.	

Make a smooth batter sponge and let it ferment in a suitable vessel. Dust the surface of sponge as for Vienna rolls, let the sponge drop then dough up with :

10 lb. blended flours (variable)	4½ to 5 oz. salt
2 qt. water 85 deg. F.	2 oz. carraway seeds (if desired)

If carraway seeds are incorporated, bruise them together with the salt by using the back of a table brush. Rub well on the table. The bruised seeds will liberate the essential oil and be immediately absorbed by the salt. The baked bread will possess the desired aroma which would be absent by just adding the seeds. Clear the sponge and use sufficient flour to obtain a firm but not-too-stiff dough. Mix the dough well for at least 15 min. Larger quantities mixed on the machine should be mixed by adding 75 per cent. of the doughing water, and adding the remaining 25 per cent. of the water gradually. In this way the water absorption capacity of the rye flour will be fully used. Rye flour doughs need longer mixing than wheat flour doughs.

The addition of 4 oz. dried milk to the sponge is very beneficial to the texture and colour of crumb, the bloom of the crust, and the symmetrical development of the shape of the baked loaf.

After mixing let the dough rest for 30 to 45 min. either in the bowl, trough, or well covered up on the table. When scaling the dough, the use of a knife is superfluous ; rye dough does not possess the resiliency and elasticity of wheat flour doughs. It is very much shorter and sticky. Skill and care are needed to mould a round, bloomer or shuttle-shaped rye loaf. Weighing off is done by nipping off or scooping off with the hands from the bulk of the dough. For moulding, only rye flour must be used ; on no account are rice cones permitted. The moulded loaves, whether cobs, bloomers, or shuttles, are put into boxes liberally dusted at the bottom with rice and rye cones, or a mixture of the flour and semolina. The latter is the usual practice in England. The boxes are piled up on top of each other as are other rolls or loaves.

I prefer and advise to proof the loaves or rolls with the close up on boards covered with cloths. The round cobs must be flattened out gently by making a shallow groove with the root

of the hand. Cover with cloths. Proof bloomer and shuttle shapes between the folded up cloth—like Vienna bread. The loaves will proof in about 1 hr. Before setting, wash with cold water and stab the loaves, before washing, five times with a pencil-like skewer. Set in steam, but do not close the oven door until all the loaves are set and expanded to their full size. Then close the door and bake until the loaf sounds hollow when knocked at the bottom with the hand or fist.

To bake the loaves thoroughly it is indeed very advisable to shift the loaves from the left side of the oven chamber to the right and *vice versa*. Those at the oven mouth should be shifted to the back and from the back to the front. As an alternative, usually practised in continental and Jewish bakeries here in England, the whole batch is drawn, washed and put into a cooler oven until baked. This procedure is a good baker's practice. Obviously to the untrained or uninitiated the above seems to be a waste of time, but the omission of such procedure means waste of good dough, labour, and badly baked bread.

Stack the baked loaves in a well-ventilated room in racks, with sufficient space to let the loaves cool.

The bread from the above formula will be pleasantly sweet eating and of good and even texture and good crumb colour. The crust will be a rich appetising brown.

Should a loaf be required of slight acidity, add to the sponge 8 oz. sour dough for each gallon of the total liquid. To increase the acid taste, simply increase the proportion of sour dough every time by 2 oz. per gall. of liquor. Thus, the required acid taste can be controlled by every baker.

To make a basic sour dough :

Use 5 parts rye flour plus 3 parts sour milk, mix well together. Dough temperature 72 deg. F. and let lie well covered for 18 hr. For the next day's baking keep back sufficient unsalted dough and let it lie in a cool place of the bakehouse. This procedure is sufficient for the half sponge method as formulated above.

Viennese Beer Rolls

This type of roll has a soft crust and possesses a delightful aroma and taste. Continental customers and gourmets like the scent of carraway and consume such rolls at their *dejeuner*, second breakfast, or at lunch. The seeds, of course, can be omitted if so desired. The roll is shuttle-shaped like a bridge roll.

When mixing a kaiser roll dough or suchlike, break off 6 lb. half-mixed dough and add 2 to 3 oz. basic leaven as used in rye bread. Furthermore, crush $\frac{1}{4}$ oz. carraway seeds and an additional $\frac{1}{2}$ oz. salt with the back of the table brush and finish the dough,

which should not be too firm. Manipulate and bake as other kinds of Vienna rolls on the oven sole.

Schambureck's Vienna Beer Rolls

This baker, Herr Karl Schambureck, the "Flying Master Baker" of Europe, the greatest Vienna bread and rolls baker alive, who uses only milk, butter, shell eggs, and oil in his productions, pays the highest wages and contents himself with a very low rate of profit, is a unique man indeed. He is a friend of mine and served in my regiment.

13 lb. ripe kaiser roll dough	1 pt. milk
4 oz. carraway seeds	1 lb. white rye flour
2 oz. yeast	$\frac{1}{2}$ oz. salt

Put the lot into the dough mixer (yeast dispersed in milk) and mix well into a smooth dough. Let it ferment for 1 hr. Weigh off, hand up, and shape into shuttle rolls. Proof on cloths with the close towards the board. Set, without cutting, close upwards.

Viennese Peasant Rolls

(Wachauer Laiberl)

$4\frac{1}{2}$ lb. national flour	$\frac{3}{4}$ lb. dark rye flour
$2\frac{1}{2}$ lb. kaiser roll dough	5 oz. yeast
10 lb. slack rye bread dough	4 oz. salt
$1\frac{1}{2}$ pt. milk	

Disperse the yeast in the milk and mix all the ingredients into a medium smooth dough. Let lie for 1 to $1\frac{1}{2}$ hr. Weigh off, mould round, and proof on flour-covered boards with the close towards the board. Bake in steam with close upwards.

Bosniaken

(Rye bread rolls)

From the above dough make short baton or shell rolls, proof as Vienna peasant rolls, with close down but on a cloth-covered board. Just turn over before setting and bake in steam.

London Black Bread

($\frac{1}{2}$ sack dough)

Sponge at 76 deg. F. :

50 lb. national flour	$1\frac{3}{4}$ lb. yeast
40 lb. (4 gall.) water 80 deg. F.	2 lb. sour dough (unsalted)

Let it stand until the sponge begins to drop.

Dough with :

44 lb. national flour	$\frac{1}{4}$ lb. yeast
28 lb. rye flour (ordinary)	18 lb. sour dough (unsalted)
28 lb. wholemeal flour	$\frac{1}{2}$ lb. caramel
35 lb. (14 qt.) water 70 deg. F.	3 lb. salt

Mix all the ingredients into a smooth, not-too-tight dough. Let it lie for 1 hr., scale off, and proceed as described above.

Whey Bread

Whey bread is an old speciality of Austria's bakers. It is a beautiful looking loaf, possesses a distinctly attractive aroma and is delightful to eat. As schoolchildren we bought small loaves and ate them warm. Our instinctive craving was a healthy one—whey bread is rich in natural mineral salts contained in the whey and Vitamin G. I am sure the medical profession and health authorities would foster its consumption because of its high nutritional values. And I am also as certain that whey bread will take the British market. A new outlet for the British baker.

There should be no difficulty to obtain liquid whey from cheese and casein manufacturers who treat whey as a waste product and dispose of it at considerably high cost. Whey is a yeast stimulant. To look at whey bread and eat it is indeed an experience, even for the gourmet. I have to meet the professor yet who still



Peasant Rolls (Wachauer Laiberl)

maintains that bread—white or brown—is of secondary food value after tasting and eating such lovely bread. I warn my readers not to be tempted to make an off-hand dough. Rye is different to wheat flour as explained above. Rye flour fermentation is a highly developed technique, incomparable to wheat flour dough fermentation. Sour rye bread production as customary in comparatively few bakeries in Great Britain, is carried out in merely haphazard fashion, lacking the most rudimentary scientific principles.



Bosniaken, Rye Bread Rolls

Whey Bread

(2 gall. dough)

Half Sponge :

1 gall. of liquid whey or	6 oz. yeast
water plus the equiv-	4 oz. malt flour or extract
alent of powdered	10 lb. white rye flour
whey 90 deg. F.	

Make a smooth batter sponge by adopting Viennese technique as described. Let the sponge get quite ripe, and when on the drop start mixing.

Dough up with :

1 gall. liquid whey or	2 oz. yeast
water plus equiva-	10 oz. salt
lent of dried whey	6 lb. white rye flour (variable)
	20 lb. national flour (variable)

Disperse the yeast in the whey, add the salt and pour into the sponge which has to be cleared. Mix into a firm dough with the rest of the rye and flour. Finish the dough by braking 20 lb. pieces with forearm. Cover up and let ferment for 30 min. Weigh off into 1 lb. pieces, hand up, let recover, and mould into final shapes, such as round cobs (well flattened out after recovery), bloomer shape, or tin loaves. Proof in Vienna fashion and wash with cold water before setting. Set cobs and bloomers on the oven sole.

Bake thoroughly in a steam-filled oven at 420 deg. F. on the drop. When half-baked, shift loaves to back and *vice versa*. When drawn, wash over once more with cold water.

CHAPTER XXIV

FAULTS IN VIENNA BREAD

Runny Doughs.—Causes :

- 1st : too weak a flour
- 2nd : sponge and/or dough too warm and too long fermenting

Weak Doughs.—Causes :

- 1st : too weak flour
- 2nd : too much salt
- 3rd : mixed too slack

Softening Doughs.—Cause :

Flour possesses bad water absorption capacity

Lifeless Doughs.—Causes :

- 1st : bad or not sufficient quantity of yeast
- 2nd : not enough malt
- 3rd : not enough sugar

Doughs too dry.—Loaves and/or rolls crusting when proofing.

Causes :

- 1st : too firmly mixed dough
- 2nd : not sufficient yeast
- 3rd : too cold bakery and/or dough room

Somnolent Doughs.—Causes :

- 1st : no or bad yeast
- 2nd : yeast was scalded or came into contact with salt
- 3rd : too much salt
- 4th : too little malt or sugar

Too old or overwrought doughs.—Causes :

- 1st : in sponged doughs the doughing liquor too warm
- 2nd : too much yeast used
- 3rd : dough mixed too slack (because yeast reproduction performed too quickly). With straight doughs insufficient yeast in the proofing stage.

If dough tastes and smells sour.—Use less yeast and lower sponge or doughing liquor temperatures, and mix firmer doughs.

Rolls or loaves, when baked, coming from the oven smaller than before setting.—Causes :

- 1st : too old flour with negligible bakeability
- 2nd : insufficient proof
- 3rd : too much proof
- 4th : too firmly mixed dough

Flat bottoms of loaves or rolls.—Causes :

- 1st : dough too warm
- 2nd : overproof
- 3rd : too much malt and/or sugar

Too round bottoms.—Causes :

- 1st : too cold dough
- 2nd : taken too young (green)
- 3rd : dough too tight
- 4th : insufficient proof

Greyish colour of crust of loaves or rolls.—Cause :

- No steam or bad supply, oven too cold or skinned during proof

Hard, coarse and/or wooden crust.—Causes :

- 1st : dough too old
- 2nd : too high dough temperature
- 3rd : too cool oven

Leathery soft crust.—Causes :

- 1st : sponge and doughing liquor too cold
- 2nd : too much malt and/or sugar
- 3rd : oven temperature too high
- 4th : too strong flour

Too close texture.—Causes :

- 1st : too warm and too much proof
- 2nd : too hot oven
- 3rd : too stiff and too old dough

Kaiser Semmel (Imperial roll and Rosettes).—Show closed rosettes. Causes :

- 1st : too much proof
- 2nd : too soft dough
- 3rd : too old dough
- 4th : rosette's face floury or skinned

*Kipfl (Crescent) possessing no creases.—Cause :
Overproof*

*Bridge and Finger Rolls.—Insidious, straw-like crumbs. Cause :
Overproof in too hot a proofer*

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